

Year 7

Timing	Unit Title	Key Question	Knowledge	Assessing Understanding
Autumn	Positive Numbers	Can you use all four operations correctly?	- Place value. - Using the four operations. - Long multiplication & division. - Order of operations. - Problem solving with positive integers.	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 - problem solving skills Assessment Point information - classroom tests relevant to topics studied
	Factors and multiples	Can you find HCF and LCM of a group of numbers?	- Recognising prime numbers. - Identifying multiples and factors of numbers. - Divisibility rules - Understanding power and roots. - Finding HCF and LCM of a group of numbers using prime factorisation. - Applying the above concepts to solve real life problems.	
	Negative numbers	Can you work with negative numbers?	- Recognising the use of negative numbers in the real world. - Adding, subtracting, dividing and multiplying with negative numbers. - More order of operations with negative and positive numbers. - Using negative numbers in problem solving.	
	Fractions	Can you add, subtract, multiply and divide with fractions?	- Use fraction notation and express one quantity as a fraction of another. - Convert between improper fractions and mixed numbers. - Identify equivalent fractions, simplify fractions and compare fractions.	

			- Perform the four operations on fractions and on mixed numbers. - Problem solving with fractions.	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 - problem solving skills Assessment Point information - classroom tests relevant to topics studied How understanding is assessed
	Algebra	Can you set up expressions and formulae and substitute into them? Can you simplify algebraic expressions?	- Use letters to represent numbers - Interpret simple algebraic notation - Substitute integers into simple expressions and formulae - Simplify expressions by collecting like terms - Expand a single bracket - Expand and simplify more than one set of single brackets.	
Spring	Linear equations	Can you solve a linear equation?	- Solving linear equations in one variable, including brackets and fractions. - Forming linear equations from a worded problem.	
	Angles, Parallel Lines & Triangles	Do you know your angle properties?	- Measuring and drawing angles using a protractor. - Applying properties of angles in triangles, on a straight line, vertically opposite and around a point. - Applying properties of angles for parallel lines.	
	Decimals	Can you add, subtract, multiply and divide with decimals?	- Ordering decimals. - Adding, subtracting, multiplying and dividing with decimals. - Convert between metric units of measure. - Solving real life problems with decimals. - Solving problems involving time.	

	Percentages	Can you convert between fractions, decimals & percentages? Can you find a percentage of an amount?	- Working interchangeably with percentages, decimals and their corresponding fractional equivalents. - Writing one number as a percentage of another. - Finding simple percentages of amounts.	- by applying the theory to a range of questions and increasingly more complex situations - discussion in lessons, sample problems - homework and tests
	Coordinates	Do you know how to use the coordinate system to plot points?	- Construct the Cartesian coordinate system in two dimensions and state the coordinates of points on it. - Plot a graph of a set of ordered pairs as a representation of a relationship between two variables.	Skills - understanding of the concepts - numerical skills - algebraic skills - problem solving skills Assessment Point information - classroom tests relevant to topics studied
Summer	Perimeter and Area of Triangles, Parallelograms and Trapezia	Can you use the formulae for the area of different shapes to solve problems?	- Properties of 2D shapes. - Find the perimeter and area of 2D shapes. - Solve problems involving perimeters and areas of composite plane figures formed by rectangles, squares, triangles, parallelogram and trapezia.	
	Volume and Surface Area of Cubes and Cuboids	Can you find the surface area and the volume of cubes and cuboids?	- Draw nets of cuboids, including cubes - Calculate the surface areas and volumes of cuboids, including cubes - Solve problems involving volume and surface area of cuboids, including cubes	

	Transformations	Can you use rotational symmetry & lines of reflections?	• Translate, rotate and reflect 2D shapes • Describe translations in vector form • Combine transformations	
	Collecting, Organising and Displaying Data	Can you use statistics and charts to present on a topic of your choosing?	• Recognise different methods of collecting data • Identify and write appropriate survey questions • Organise data • Create frequency tables • Finding averages and range from a frequency table • Construct, analyse and interpret pictograms, vertical line charts, bar charts and compound bar charts	
	Famous Mathematician Project	Can you learn more about some of the great mathematicians in the world?	• Research • Design a poster	