Maths

Year 9

What are the aims and intentions of this curriculum?

Term	Set 1/2	Set 2/ 3/4	Set 5	Assessment
Autumn 1	●To be able to calculate with powers and roots ●To explore the use of standard form ●To explore the effects of rounding ●To know and apply standard mathematical constructions ●To explore ways of representing 3D shapes	●Identify and use the prime factorisation of a number ●Round numbers to an appropriate degree of accuracy ●Understand and use standard form ●To be able to add, subtract, multiply and divide with negative numbers ●To be able to apply the correct order of operations	●Solve problems with Prime Numbers ●Solve problems with Highest Common Factor and Lowest Common Multiple ●Explore powers and roots and number patterns ●To be able to compare and order numbers ●To be able to use written methods to multiply and divide ●To be able to apply the correct order of operations	Mini topic assessments after each section of work
Autumn 2	●To understand equations and identities ●To manipulate algebraic expressions ●To construct algebraic statements ●To solve problems involving direct and inverse proportion ●To understand and solve problems involving similarity and congruence ●To know and use compound units	●To explore enlargement ●To use scale drawings and bearings ●To explore representations of 3D drawings ●To understand the language of probability ●To explore experiments and outcomes ●To be able to calculate probabilities	●To be able to use conventional terms and notations ●To be able to recognise line and rotational symmetry ●To be able to draw diagrams from a written description ●Investigate the properties of 3D shapes ●Know the properties of triangles and quadrilaterals ●Apply the properties of triangles and quadrilaterals to solve problems	Mini topic assessments after each section of work and a written assessment covering all the work completed so far.
Spring 1	●To recognise and generate Fibonacci sequences ●To generate quadratic sequences ●To calculate the next terms in quadratic sequences ●To understand and use the concepts and vocabulary of inequalities ●To solve linear inequalities in one variable ●To represent the solution set to an inequality on a number line	●To be able to simplify expressions ●To be able to factorise expressions ●To be able to change the subject of a formula ●To understand the relationship between ratio and proportion ●To be able to solve problems involving proportional reasoning ●To be able to solve problems involving compound measures	●o be able to simplify expressions ●To be able to expand a single bracket ●To understand how to use function machines ●To be able to convert between fractions and percentages ●To be able to simplify a ratio ●To be able to share in a ratio	Mini topic assessments after each section of work
Spring 2	●To solve problems involving arcs and sectors ●To solve problems involving surface area of cylinders ●To calculate lengths using Pythagoras' Theorem ●To explore the congruence of triangles ●To form conjectures ●To create a mathematical proof	●Generate terms of a sequence and find a general rule for a sequence ●Understand and use angle properties of parallel lines ●Explore the angle properties of regular polygons ●To be able to calculate percentage change ●To be able to calculate reverse percentages ●To be able to interpret fractions as numbers and operators	●o measure lines and angles accurately ●To convert between metric units of length, mass and capacity ●To apply angle rules Apply the four operations to fractions ●Apply the four operations to mixed numbers and improper fractions ●Use the multiplier method for percentages	Mini topic assessments after each section of work and a written assessment covering all the work completed so far.
Summer 1	●To investigate features of straight line graphs ●To explore graphs of quadratic, other standard and non-standard functions ●To explore graphs of non-standard functions ●To solve kinematic problems	●o explore the area and circumference of circles ●To calculate the radius and diameter of circles ●To calculate volume of cylinders and area/perimeter of shapes related to circles	●o solve one step equations ●To solve two step equations ●To solve three step equations ●To calculate area and perimeter of rectangles and triangles ●To calculate area of parallelograms and trapezia ●To calculate volume and surface area of cuboids	Mini topic assessments after each section of work
Summer 2	●To be able to solve equations with 2 unknowns simultaneously ●To be able to set up and solve equations with 2 unknowns simultaneously ●To be able to find approximate solutions using graphs	●To plot and interpret linear graphs ●To plot and interpret quadratic graphs ●To model real situations using linear graph	●Draw and Describe Reflections ●Draw and Describe Rotations ●Draw and Describe Translations ●To be able to construct and complete frequency tables ●To be able to construct and interpret pictograms and bar charts ●To be able to construct pie charts	Mini topic assessments after each section of work. End of Year written assessments