| Year 7 | Autumn 1 |  |  | Autumn 2 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Transition | Integers, Roots and Powers | Lines and Angles | Expressions, Formulae and Identities | Sequences |  | Place Value and Integers |
|  | To consolidate prior KS2 learning of: initial algebra and number concepts, simple shape calculations, proportional reasoning. <br> Baseline Test | Multiples, factors and primes; use a scientific calculator; order of operations (BiDMAS) | Angles at a point; angles on a straight line; vertically opposite angles; alternate, corresponding and co-interior angles; derive and use the sum of angles in a triangle. | Algebraic notation and operations; simplify expressions; substitute into and use a formula. | Generate sequences; describe using term to term or position to term rules. |  | Multiply \& divide with powers of 10; order decimals; negative numbers. |
|  | Spring 1 |  |  | Spring 2 |  |  |  |
|  | Analysing Data | Fractions and Decimals |  | Transformations |  | Equations and Functions |  |
|  | Averages (mean, mode, median) and spread (range); tables, charts and diagrams for ungrouped and grouped numerical data. | The four operations with fractions; terminating decimals and their corresponding fractions. |  | Reflection, rotations, translations and enlargements; symmetry in shapes. |  | Algebraic methods to solve linear equations; understanding and using functions. |  |
|  | Summer 1 |  |  | Summer 2 |  |  |  |
|  | Shapes and Constructions | Perimeter, Area and Volume | Linear Graphs | Probability |  | Percentages and Ratio |  |
|  | Visualise 2D and 3D shapes; properties of shapes; simple constructions. | Perimeter and area of rectangles, triangles, parallelograms and trapeziums; volume and surface area of a cuboid; metric and imperial units. | Co-ordinates; drawing and understanding straight line graphs. | The 0-1 probability scale; calculate simple probabilities; probabilities of all possible outcomes sum to 1 ; simple experimental probability |  | Express one quantity as a percentage of another; compare two quantities using percentages; convert between fractions, decimals and percentages; simple percentage change; understand ratio notation and simple direct proportion. |  |
|  | Pre unit diagnostic tests to assess prior knowledge of a topic, common fortnightly homework assignments which test problem solving from any topic across prior taught material, questions for mastery to formatively assess progress <br> Common class tests will be issued to test curriculum knowledge. |  |  |  |  |  |  |


| $\begin{aligned} & \text { Year } \\ & 8 \end{aligned}$ | Autumn 1 |  |  |  | Autumn 2 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Sequences and functions | Calculations |  | Shape | Fractions, Decimals and Percentages | Sampling and Discrete Data |  | Expressions, formulae |
|  | Generating linear and non-linear sequences; finding simple nth term rules; mapping diagrams; inverse functions. | BiDMAS in more complex calculations; further arithmetic with negative numbers; efficient use of a calculator. |  | Circles (circumference and area); surface area and volume of prisms (including cylinders); units in area and volume. | Further percentage change using a multiplying factor; reverse percentages; more complex calculations with fractions. | Types of data; sampling and bias; averages from discrete data; representing discrete data with a variety of diagrams. |  | Manipulating expressions using indices; further substitution; changing the subject of a simple formula. |
|  | Baseline Test |  |  |  |  |  |  |  |
|  | Spring 1 |  |  |  | Spring 2 |  |  |  |
|  | Place value, ordering and rounding |  | Linear Equations |  | Lines and Angles | Graphs |  | Continuous and Bivariate Data |
|  | Rounding and estimation; standard notation and simple calculations. | d form | Form and solve more complicated linear equations. |  | Angles in polygons; three-figure bearings; geometrical reasoning; Pythagoras' Theorem. | Equation of a straight line; graphs in context; calculating and interpreting gradients. |  | Averages from grouped data; graphs and tables using continuous data; scatter graphs and correlation. |
|  | Summer 1 |  |  |  | Summer 2 |  |  |  |
|  | Probability | Equations and Inequalities |  | Transformations | Ratio and Proportion |  | Construction and Loci |  |
|  | Mutually exclusive events; sample space and Venn diagrams; relative frequency. | Trial and improvement; solve linear inequalities and represent solution on a number line; creating and solve equations from contextual problems. |  | Further transformations; enlargement by a negative or fractional scale factor; combined transformations; planes of symmetry in 3D shapes. | Further direct proportion; inverse proportion; calculations with ratios; comparing ratios. |  | Scale drawing; further ruler and compass constructions; simple loci. |  |
|  | Pre unit diagnostic tests to assess prior knowledge of a topic, common fortnightly homework assignments which test problem solving from any topic across prior taught material, questions for mastery to formatively assess progress <br> Common class tests will be issued to test curriculum knowledge. |  |  |  |  |  |  |  |


|  | Autumn 1 |  |  |  |  | Autumn 2 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Year 9 | Graphs 1 | Pythagoras and Trigonometry |  | Fractions/Decimals/ Percentages |  | Equations | Indices | Transform | mations | Simultaneous Equations |
|  | Further linear graphs, intersections, mid points. | Further use of Pythagoras' theorem. Use of trigonometry to find angles and sides. |  | Further calculations with fractions and decimals, recurring decimals, reciprocals, use of calculator and compound percentage change. |  | Complex linear equations. Solving inequalities. Regions on a graph. | Powers and roots, laws of indices, using prime factor decomposition, simple surds and standard form. | Combinations of transformations, congruence and similarity, and units in length, area and volume. |  | Solve pairs of equations with two unknowns. |
|  | Baseline Test |  |  |  |  |  |  |  |  |  |
|  | Spring 1 |  |  |  |  | Spring 2 |  |  |  |  |
|  | Data Handling and Analysis |  | Probability |  | Brackets and Quadratics |  | Graphs 2 |  | Angles, Construction and Loci |  |
|  | Calculating averages, range, IQR, statistical diagrams and comparing data sets. |  | Further probability work including compound events, independent events and use of tree diagrams. |  | Expand and factorise expressions. Solving quadratic equations by factorisation. |  | Using graphs in context. Plotting and simple use of quadratic, cubic and reciprocal graphs. Graphs of the trigonometric functions. |  | Use of angle properties, circle theorems, constructions and loci. |  |
|  | Summer 1 |  |  |  |  | Summer 2 |  |  |  |  |
|  | Estimation and Place Value | Sequences and Functions |  |  | Formulae | Proportion | Mensuration |  | Further Quadratics |  |
|  | Further ratio problems, direct and inverse proportion, upper and lower bounds, and estimation. | Finding the nth term. Fractional sequences, Fibonacci-type sequences, simple quadratic sequences. |  | Further change of subject and substitution. Function notation. |  | Further ratio problems, direct and inverse proportion. | Area and perimeter, circles, arcs and sectors, surface area and volume of prisms. |  | Further expansion and factorisation, the quadratic formula. Completing the square. |  |
|  | Pre unit diagnostic tests to assess prior knowledge of a topic, common fortnightly homework assignments which test problem solving from any topic across prior taught material, questions for mastery to formatively assess progress <br> Common class tests will be issued to test curriculum knowledge. |  |  |  |  |  |  |  |  |  |

