Progression of knowledge and skills: Y8 Mathematics (Autumn)

Topic	Knowledge (Pupils will learn…)	Skills (Pupils will learn how to…)
Ratio and Scale Autumn 1	• representing ratios • simplifying ratios • sharing into given ratios • ratios as fractions	• Simplify any given ratio • Share an amount in a given ratio • Solve ratio problems given a part
Multiplicative Change Autumn 2	• direct proportion • conversion graphs and between currencies • scale factors and diagrams • interpreting maps	• Solve problems and explain direct proportion • Use conversion graphs to make statements, comparisons and form conclusions. • Understand and use scale factors for length
Multiplying and Dividing Fractions Autumn 3	• repeated addition • multiplying unit and non-unit fractions • dividing fractions • the reciprocal • quick multiplying and cancelling down	• Carry out any multiplication or division using fractions and integers. • Solutions can be modelled, described and reasoned
Working in the Cartesian Plane Autumn 4	• coordinates in all four quadrants • lines parallel to the axes • recognising and using the lines y=x, y=kx, y=x+a • plotting y=mx+c graphs • lines with negative gradients	• Label and identify lines parallel to the axes • Recognise and use basic straight lines • Identify positive and negative gradients • Link linear graphs to sequences • Plot y = mx + c graphs
Representing Data Autumn 5	• drawing and interpreting scatter graphs • the line of best fit • correlation • ungrouped and grouped data • two-way tables	• Draw and interpret scatter graphs • Describe correlation and relationships. • Identify different types of non-linear relationships. • Design and complete an ungrouped frequency table. • Read and interpret grouped tables (discrete and continuous data) • Represent data in two-way tables.

Progression of knowledge and skills: Y8 Mathematics (Spring)

Topic	Knowledge (Pupils will learn…)	Skills (Pupils will learn how to…)
Tables and probability Spring 1	• sample space diagrams • two-way tables • Venn diagrams • using the product rule	• Construct a sample space diagram. • Systematically list outcomes. • Find the probability from two-way tables. • Find the probability from Venn diagrams.
Brackets, Equations and Inequalities Spring 2	• forming expressions • expanding single brackets • factorising • forming and solving inequalities • algebraic constructs	• Form Expressions • Expand and factorise single brackets • Form and solve equations • Solve equations with brackets • Represent inequalities • Form and solve inequalities
Sequences Spring 3	• linear and non-linear sequences • tables and graphs to represent sequences • using algebraic rules to form sequences • finding the nth term rule for a sequence	• Generate a sequence from term to term or position to term rules • Recognise arithmetic sequences and find the nth term • Recognise geometric sequences and other sequences that arise
Indices Spring 4	• indices laws • addition and subtraction with indices • multiplication and division with indices	• Add/ Subtract expressions with indices • Multiply expressions with indices • Divide expressions with indices • Know the addition and subtraction laws for indices
Fractions and Percentages Spring 5	• converting fractions, decimals and percentages • finding fractions and percentages of amounts • decimal multipliers • percentage change	• Convert between FDP less than and more than 100. • Increase or decrease using multipliers. • Express an amount as a percentage. • Find percentage change.
Standard Form Spring 6	• positive and negative powers of 10 • ordering numbers in standard form • using the four operations with standard form • using a calculator	• Write numbers in standard form and as ordinary numbers • Order numbers in standard form • Add/ Subtract with standard from • Multiply/ Divide with standard form • Use a calculator with standard form

Progression of knowledge and skills: Y8 Mathematics (Summer)

Topic	Knowledge (Pupils will learn…)	Skills (Pupils will learn how to…)
Angles in Parallel Lines and Polygons Summer 1	• basic angle rules and notation • alternate, corresponding and co-interior angles • interior and exterior angles • properties of quadrilaterals	• Identify alternate angles • Identify corresponding angles • Identify co-interior angles • Find the sum of interior angles in polygons • Find the sum of exterior angles in polygons • Find interior angles in regular polygons
Area of trapeziums and Circles Summer 2	• finding the area of rectangles, triangles and parallelograms • finding the area of circles • compound shapes	• Recall area of basic 2D shapes • Find the area of a trapezium • Find the area of a circle • Find the area of compound shapes • Find the perimeter of compound shapes
Line Symmetry and Reflection Summer 3	• symmetry • reflection	• Recognise line symmetry • Reflect in a horizontal line • Reflect in a vertical line • Reflect in a diagonal line
The Data Handling Cycle Summer 4	• statistical enquiries • questionnaires • pictograms, bar and line charts • pie charts • interpreting charts • grouping data • the range	• Set up a statistical enquiry • Design and criticise questionnaires • Draw and interpret multiple bar charts • Draw and interpret line graphs • Represent and interpret grouped quantitative data • Find and interpret the range • Compare distributions
Measures of Location Summer 5	• mean, median and range • appropriate averages • outliers • distribution	• Understand and use mean, median and mode • Choose the most appropriate average • Identify outliers • Compare distributions using averages and range