

# Year 9 Topic Lists

## Autumn Term

Frequency tables, bar charts, pie charts and pictograms
Interpret multiple and composite bar charts.
Calculate the mean, mode, median and range for ungrouped data.
Find the modal class, and calculate estimates of the range, mean and median for grouped data, and
Use statistics to make simple comparisons or describe population characteristics.
Recognise graphical misrepresentation through incorrect scales, labels, etc.
Plot and interpret scatter diagrams for bivariate data. Recognise correlation. Identify an outlier in simple
Index notation
Calculations with index notation
Four rules for whole numbers, positive and negative
Inverse operations
Standard Index form
Calculations with standard form
Prime numbers and prime decomposition
HCF and LCM
Order of operations
Algebraic substitution
Collecting like terms
Simplifying products and quotients
Multiplying out single brackets brackets
Factorising using common factors
Multiplying out double brackets
Solving linear equations including those with brackets or unknown on both sides

Inequalities-use of symbols and number line
Solving linear inequalities
Equivalent fractions
Calculations with fractions
Fractions of amounts problem solving
Converting between fractions, decimals and percentages
Decimals, four rules non-calc
Probability-equally likely outcomes
Relative frequency
Listing outcomes and sample space
Venn diagrams

## Spring Term

Function machines
Changing the subject of a formula
Term to term sequences
Nth term of sequences
Special sequences-fibonacci, square, triangle numbers
Coordinates in 4 quadrants
Using a table of values to plot linear graphs
Using a table of values to plot quadratic graphs
Rounding using decimal places and significant figures
Estimation using significant figures
Solve simultaneous equations graphically
Approximate solutions to equations using graphs
Recognise and sketch linear and quadratic graphs
Approximate solutions to equations using trial and improvement
Use of $y=mx+c$ for straight line graphs
Equivalent ratios
Writing a ratio in the form 1:n
Share in a given ratio
Word problems with ratio and proportion
Relationship between ratio and fractions
Reflections
Rotations
Translations

Enlargements
Percentage of amounts
Percentage change
Using percentage multipliers
Simple interest
Angles in triangles and quadrilaterals
Angles rules including parallel lines
Properties of triangle, quadrilaterals including symmetry
Angles in polygons

## Summer Term

Units of measurement, length, area, volume/capacity, mass and time
Calculate the perimeter of rectilinear shapes.
Know and apply the formula for the area of rectangles, triangles and parallelogram
Area of a trapezium.
The area of composite shapes
Volume of cuboids and prisms
Surface area of cuboids and prisms
Find missing dimensions
Direct proportion
Inverse proportion
Real life graphs e.g. conversion
Congruent shapes and triangles
Similar shapes and missing lengths on triangles
Similar shapes -area and volume
Compound units e.g speed, density,
SUVAT formulae
Distance time graphs
Pythagoras Theorem
Trigonometry to find lengths and angles
Area and circumference of circles
Volume and surface area of cylinders
Use the scale of a map, and work with bearings.
Use a ruler to construct and measure straight lines. Construct congruent triangles using SSS. Use compasses

