MATHS LEARNING JOURNEY

NUMBER   **RATIO**   **ALGEBRA**   **STATISTICS AND PROBABILITY**   **GEOMETRY AND MEASURES**

MATHEMATICS

GCSE Exams

WREAKE VALLEY ACADEMY

Length, Area and volume. Calculate lengths, in similar figures. Understand congruency

Exam preparation Past papers, exam techniques

Exam preparation Past papers, exam techniques

Ratio and Proportion Direct and inverse proportion

Calculations Use iterative processes

Sequences, rules and graphs Areas under graphs

Algebra Algebra review

Shape and space. Geometry review

Transformations Apply all 4 transformations including repeated transformations

Geometry Calculations with column vectors

Calculations Apply and interpret limits of accuracy

Transformations Transform the graph of any function

Shape. Proof of congruency and similarity

Expressions and Equations Solve simultaneous equations with a quadratic

Sequences, rules and graphs Understand gradients, parallel and perpendicular graphs

Sequences, rules and graphs Find and use the Nth term of a sequence

Probability Design and use frequency trees

Probability Tree diagrams/sample space

Angles Circle theorems

Probability calculating conditional probabilities

Indices sine rule and the cosine rule

Sequences, rules and graphs quadratic, cubic and reciprocal functions

Expressions and Equation Equation of a circle

Expressions and Equations Solve two linear simultaneous equations

Ratio and Proportion percentage change, increase/decrease

Foundation

Higher

Number System Calculate exactly with surds

Angles Properties of regular/irregular polygons

Sequences, rules, and graphs Sketch the graphs of y =sin x

YEAR 11

Number System Calculate with numbers in standard form

Time, units and measures Compound measures

Constructions construct plans and elevations of 3D shapes

Constructions Loci and constructions

Transformations Describe the changes and invariance.

Indices Calculate with fractional indices

Length, Area and volume. Calculate area/volume of circles, sectors and cylinders

Expressions and Equations: Solve linear inequalities

Indices prime factorisation LCM/HCF

Statistics Use and apply sampling methods with data

Shape Pythagoras' theorem and Trigonometry in 3D

Shape Pythagoras' theorem and Trigonometry

YEAR 10

Expressions and Equations Expanding products of two binomials

Angles Drawings and use bearings

Constructions Solve loci problems

Expressions and Equations Factorise and solving quadratic expressions

Statistics Histograms and cumulative frequency graphs

Expressions and Equations Solve quadratic inequalities

Foundation

Higher

Transformations Describe the changes and invariance achieved by combinations of transformations.

Shape and space Find the surface area of 3D shapes including a cylinder

Shape Pythagoras' theorem and Trigonometry

Length, Area and volume. Calculate arc lengths, angles and areas of sectors of circles

Sequences, rules and graphs Find the equation of a straight line in the form y = mx + c.

Number system Increase/decrease by a % using multipliers.

Probability Use a Venn diagram

Ratio and Proportion Problems involving direct and inverse proportion

Expressions and Equations Factorise quadratics

Ratio and proportion Best buys

Statistics Calculate averages from grouped data.

Time, units and measures Use standard units of measure and related concepts. SDT

Sequences, rules and graphs Use a table of values to plot graphs of linear functions.

Ratio and Proportion Share in a ratio including where one part is known

Calculations FDP equivalences Percentage increase and decrease

Angles Properties of regular/irregular polygons

YEAR 9

Angles Use alternate and corresponding angles on parallel lines

Expressions and Equations Substitute positive numbers into expressions and formulae

Probability Mutually exclusive/Independent events. And/Or rule

Shape and space Construct and interpret Pie charts

Length, Area and Volume Use formula to find the volume of a cylinder

Expressions and Equations Expand and simplify brackets. Factorise expressions including positive quadratics

Algebra Solve inequalities and represent them on a number line

Length, Area and volume. Area and Circumference of a circle formulae.

Expressions and Equations. Solve 1 and 2 step equations And equations with unknowns on both sides

Probability Determine the probability of an event

Calculations Add and subtract fractions

Number system Apply the four operations with negative numbers

Transformations Identify, describe rotation, reflection and translation.

Statistics Construct and interpret scatter graphs

Number System Interpret standard form

Statistics Calculate mean from a table

Expressions and Equations - Form and Solve linear equations including brackets

YEAR 8

Shape and space Properties on shapes including symmetry. Angles in triangles and quadrilaterals

Ratio and Proportion Use ratio notation, simplify and share in a given ratio

Sequences, rules and graphs Find the nth term of linear sequences.

Time, units and measures Use equivalences between metric units and common imperial units

Shape and space Finding the volume of cuboids and prisms

Constructions Interpret and construct plans and elevations of 3D shapes.

Constructions Construct triangles and 2-D shapes

Calculations Use approximation and estimation

Statistics Calculate the median, mean, mode, and range

Calculations Apply the four operations to integers and decimals.

Number system Using BIDMAS to order operations

Number System Types of number. HCF/LCM, prime factors.

Length, Area and volume. Calculate area of triangles, parallelograms trapezia.

Angles Angles at a point, angles on a straight line, vertically opposite angles.

Statistics Draw tally charts, pictograms, two-way tables and bar charts

Expressions and Equations Simplifying expressions and collecting like terms

Baseline test

YEAR 7