Maths Learning Journey

The East Manchester Academy

YEAR 11

Practical Geometry: Bearings; Similar Shapes

Assessment point

Graphs: Velocity Time Graphs; Trig Graphs; Area under a graph; Equations of Circles; Transformations of Graphs

Assessment point

Feedback SOW from Assessment: Reverse Compound Interest; Averages of combined data sets; Rationalising Surds; Histograms; Inverse functions

Assessment point

Updated feedback SOW from Assessments: Fractional and Negative Indices; Capture Recapture; Iterations; Quadratic Direct and Inverse Proportion

Exam Preparation and Two Weekly Tests: Fractional and Negative Enlargements; Bounds; Algebraic Tree Diagrams; Similar Shapes with Area and Volume; Quadratic Simultaneous Equations

Exams and post 16 study

Games of Chance: Dependant Tree Diagrams; Product Rule; Time Series; Conditional Probability

YEAR 10

Graphs: Working with Coordinates; Parallel and Perpendicular Lines; Quadratic Sequences; Graphs of Inequalities

Proportion: Error Intervals; Direct and Inverse Proportion

Assessment point

Intermediate Geometry: Distance time graphs; Trigonometry

Algebra Fundamentals: Algebraic Fractions; Expanding Binomials; Completing the Square; Rearrange Complex Formulae

Grouped Frequency: Cumulative Frequency; Box Plots

FDP: Compound Interest and Depreciation; Mixed Number Fractions; Recurring Decimals; Applied Percentages

Assessment point

Problem Solving Week

Spatial geometry: Circle Theorems; Spheres, Cones and Pyramids; Arcs and Sectors

Application of Algebra to Solve Problems: Solving Quadratics; Function Notation and Composite Functions; Quadratic Formula; Simultaneous Equations

Reasoning with geometry: Pythagoras Theorem; Deduction; Reasoning with angle facts; Rotation and Translation

Assessment point

Reasoning with proportion: Enlargement & Similarity; Recipes; Speed, Distance, Time; Best Value; Exchange Rates

Representation: Experimental Probability; Factorising; Real Life Graphs; Independent Tree Diagrams

Assessment point

Essential number: Standard Form Calculations; Simplifying Surds

Displaying Data: Two way tables; Averages from grouped frequency tables

Problem Solving Week

YEAR 9

Reasoning with number: Simple Interest; Reverse Percentages; Percentage Change

Assessment point

Constructing in 2 and 3 dimensions: Volume of Prisms; Surface area of prisms; Rotation & Translation; Construction & congruency

Reasoning with algebra: Solving Equations Graphically; Use & understand y=mx+c; Rearrange formulae; Solve equations & Inequalities with unknowns on both sides

Assessment point

Reasoning with Data: Line graphs; Comparing Distributions; Sampling; Pie Charts; Averages from tables

Developing Geometry: Area of compound shapes; Alternate, corresponding & co-interior angle rules.; Area of circle and trapezia; Lines of symmetry & reflection; Angles between parallel lines & the transversal.; Angles in Polygons; Angles in special triangles and quadrilaterals

Assessment point

YEAR 8

Reasoning with Number: Prime Factorisation, HCF & LCM; Set notation and Venn diagrams; Number Properties; Probability of a single event; Mental arithmetic strategies & use of a calculator

Assessment point

Proportional reasoning: Multiplicative change; Compare fractions with ratio; Ratio

Representations: Discrete and Continuous Data; Frequency Tables; Sample Spaces; Coordinates and Table of Values; Scatter graphs; Bar Charts; Conversion Graphs

Assessment point

Algebraic techniques: Solve Linear Equations and Inequalities; Expanding; Nth term of sequences; Indices and Powers

Developing number: Standard Index form; Estimation; Percentage increase and decrease with a multiplier; Metric Conversions

Lines & angles: Classify, construct and draw angles; Angles in Triangles and Quadrilaterals; Angles on a straight line and around a point; Parallel lines and properties

Assessment point

Fractional thinking: Four Operations with Fractions

Directed number: Four Operations with Directed Number

Application of number: Frequency Trees; Area of Rectangles, Triangles and Parallelograms; Ordering Integers and Decimals; Four Operations; Fraction & Percentages of amounts; Powers of 10; Perimeter; Calculating the Mean

Assessment point

Place value & proportion: Median, Range and Mode; Representing percentages; FDP Equivalence

Algebraic thinking: Equality and equivalence; Solve Linear Equations; Collecting like terms; Function machines & substitution; Describing Sequences; Algebraic notation

YEAR 6

KEY STAGE 2: Times tables fluency; Use of mathematical equipment, protractor, ruler etc.; Properties of 3d and 2d shapes; Understanding time & money; Collecting and recording data using tally charts etc..; Introduction to algebra using pictures and letters to find unknown values

Transition from KS2 to KS3: Understanding fractions, decimals and percentages; Multiplicative Reasoning

YEAR 7

Key

- Number
- Algebra
- Statistics
- Proportion
- Geometry