



GCSE Mathematics Foundation Tier 1MA1

Summary Document

Year 10

Half term 1 – Algebra

- 1. Algebraic manipulation**
Simplifying expressions, expanding & factorising, substitution
- 2. Expanding and factorising**
Expanding and factorising single brackets, double brackets
- 3. Forming and solving linear equations**
Equations with fractions, brackets & unknowns on both sides
- 4. Graphing equations**
Plot linear graphs, plot quadratic functions
- 5. Rearranging formulae**

Half term 2 – Number

Assessment

- 1. Percentages**
Percentage increase, decrease, change, reverse percentages
- 2. Growth and decay**
Simple interest and compound interest/decrease
- 3. Fractions, decimals, percentages**
Conversions, all operations with fractions/decimals
- 4. Factors, multiples & primes**
Identifying factors & multiples, product of prime factors, LCM/HCF
- 5. Powers & roots**
Square and cube numbers, square and cube roots, Index laws including algebraic manipulation
- 6. Standard form**
Conversions, calculations with standard form (multiplying, dividing, addition, subtraction)

Half term 3 – Statistics

- 1. Sampling**
Knowledge of key terms (e.g. quantitative, qualitative), bias, data collection
- 2. Data presentation**
Scatter diagrams, time-series graphs, two-way tables, stem & leaf diagrams, composite bar charts, pie charts
- 3. Averages**
Calculations from data sets and from tables
- 4. Rounding, estimation & bounds**
Rounding to decimal places, significant figures, error intervals, estimating calculations
- 5. Ratio**
Simplifying ratio, dividing in a ratio, writing ratios as fractions

Half term 4 – Ratio & proportion, graphs

1. Proportion

Scaling ratios (including map scales), recipes, similar shapes, currency conversions

Assessment

2. Linear graphs

Draw & interpret linear graphs, calculate gradient & y-intercept, find the equation of a line, work with parallel lines, mid-points of lines

3. Non-linear graphs

Recognise, sketch & interpret quadratics, cubic graphs, reciprocal graphs, graphical solutions to equations

Half term 5 – Shape & angles

1. Area & perimeter

Rectangles, triangles, trapezia, parallelograms, circles, composite shapes

2. Arcs & sectors

Areas of semi and quarter circles, arc lengths and composite shapes, including in terms of π

3. Volume & surface area

Prisms (including cylinders), pyramids, spheres & cones

4. Angles in parallel line lines

Basic angle facts, angles in parallel lines, bearings

5. Angles in polygons

Regular and irregular polygons, interior/exterior angles, tessellation

Half term 6 – Further shape & angles

1. Transformations

Rotation, reflection, translation, enlargement (including fractional scale factors), and combinations of these transformations

Mock Exams

2. Nets, plans & elevations

Draw front & side elevations, plans, use isometric grids, sketch 3D solids

3. Maps and bearings

Use and interpret maps, scale drawings

4. Congruency of triangles

Construction of triangles

Year 11

Half term 1 – Pythagoras, trigonometry and further algebra

- 1. Pythagoras' Theorem**
Calculate missing side lengths; work with problems in 2D
- 2. Right-angled trigonometry**
Find missing side lengths and angles using SOHCAHTOA; exact trigonometric values
- 3. Linear and quadratic equations**
Expanding and factorising quadratic equations, plotting quadratic graphs, identifying turning points, roots and lines of symmetry
- 4. Simultaneous equations**
Form and solve simultaneous equations, including those with graphical solutions

Half term 2 – Probability, compound measures & proportion

- 1. Probability**
Experimental & theoretical probability, probability tree diagrams (including dependent events), Venn Diagrams, two way tables
- 2. Compound measures**
Speed, distance, time problems; mass, density, volume problems; pressure, force, area problems; units of measure
- 3. Real-life graphs**
Compound measure graphs; conversion graphs; other real-life graphs
- 4. Direct & inverse proportion**
Statements of proportionality; setting up & solving direct and inverse proportion problems

Mock Exams

Half term 3 – Further algebra & shape

- 1. Sequences**
Arithmetic, geometric (and quadratic) sequences
- 2. Inequalities**
Linear inequalities; solution sets on number lines
- 3. Similarity & congruence**
Congruency of triangles; map scales, similar shapes
- 4. Vectors**
Column notation, resultant vectors, graphical representation

Half term 4 onwards – Final topics + revision

- 1. Loci & construction**
Perpendicular bisector (including from/at given point), angle bisector