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GCSIE Course

Autumn Term

N1 Integers and decimals

- N1.1 Place value and ordering numbers
- N1.2 Adding and subtracting negative numbers
- N1.3 Multiplying and dividing negative numbers
- N1.4 Factors and primes
- N1.5 Using prime factors: HCF and LCM

S1 Length, area and volume

- S1.1 Area of a rectangle and a triangle
- S1.2 Area of a parallelogram and a trapezium
- S1.3 Area and circumference of a circle
- S1.4 Area and perimeter of a semicircle
- S1.5 Surface area of 3-D shapes

A1 Expressions

- A1.1 Writing and simplifying expressions in algebra
- A1.2 Expanding single brackets
- A1.3 Expanding double brackets
- A1.4 Factorising single brackets
- A1.5 Factorising double brackets

N2 Decimal calculations

- N2.1 Approximation and rounding
- N2.2 Mental methods for adding and subtracting decimals
- N2.3 Written methods for adding and subtracting decimals
- N2.4 Mental methods for multiplying and dividing decimals
- N2.5 Written methods for multiplying and dividing decimals

A2 Equations and inequalities

- A2.1 Working with inverse operations
- A2.2 Solving one-sided equations
- A2.3 Solving double-sided equations
- A2.4 Solving equations with fractions
- A2.5 Inequalities

D1 Collecting data

- D1.1 Designing a survey
- D1.2 Collecting data - choosing a sample
- D1.3 Designing a data collection sheet - two-way table
- D1.4 Averages and spread
- D1.5 Mean of two combined data sets

Spring Term

N3 Fractions, decimals and percentages

- N3.1 Ordering fractions
- N3.2 Adding and subtracting fractions
- N3.3 Multiplying and dividing fractions
- N3.4 Converting fractions to decimals
- N3.5 Converting decimals and percentages to fractions

S2 Angles and circles

- S2.1 Angles in straight lines
- S2.2 Angles in polygons
- S2.3 Circle theorems
- S2.4 More circle theorems
- S2.5 Tangents to circles



D2 Displaying and interpreting data

- D2.1 Scatter diagrams
- D2.2 Using scatter diagrams
- D2.3 Stem-and-leaf diagrams
- D2.4 Interpreting stem-and-leaf diagrams
- D2.5 Box plots

A4 Straight-line graphs

- A4.1 Straight-line graphs
- A4.2 More straight-line graphs
- A4.3 Gradients and intercepts
- A4.4 The equation $y = mx + c$
- A4.5 Finding the equation of a straight line graph

A3 Sequences

- A3.1 Number patterns
- A3.2 Generating sequences
- A3.3 Finding the n th term
- A3.4 Describing patterns
- A3.5 Quadratic sequences

Summer Term

Examinations

Course Work

D3 Relative frequency

- D3.1 Probability
- D3.2 Mutually exclusive events
- D3.3 Probability and expectation
- D3.4 Theoretical and experimental probability
- D3.5 Relative frequency

N4 Proportionality

- N4.1 Introducing proportion
- N4.2 Direct proportion
- N4.3 Exchange rates
- N4.4 Compound measures
- N4.5 Proportional change

S3 Transformations and congruence

- S3.1 Reflection
- S3.2 Rotation
- S3.3 Translation
- S3.4 Describing transformations
- S3.5 Combining transformations

N5 Integers, powers and roots

- N5.1 Powers and indices
- N5.2 Index laws
- N5.3 More index laws
- N5.4 Standard index form for large numbers
- N5.5 Standard index form for small numbers

A5 Formulae

- A5.1 Identities, formulae and equations
- A5.2 Writing formulae
- A5.3 Rearranging formulae
- A5.4 Rearranging harder formulae
- A5.5 Introducing proof

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Autumn Term

Reminder of D2

D5 Cumulative frequency

- D5.1 Cumulative frequency diagrams
- D5.2 More cumulative frequency diagrams
- D5.3 Comparing data sets
- D5.4 Box plots - large data sets
- D5.5 Using box plots to compare data sets

Course Work

S4 Properties of shapes

- S4.1 Congruence and symmetry
- S4.2 Quadrilaterals
- S4.3 Triangles and Pythagoras' theorem
- S4.4 Problem solving using Pythagoras' theorem
- S4.5 Pythagoras' theorem and coordinates

N6 Estimating and calculating

- N6.1 Order of operations
- N6.2 Exact calculations
- N6.3 Mental calculations
- N6.4 Written calculations
- N6.5 Calculator methods

A6 Simultaneous and quadratic equations

- A6.1 Solving harder equations
- A6.2 Introducing quadratic equations
- A6.3 Solving equations using trial and improvements
- A6.4 Simultaneous equations
- A6.5 Further simultaneous equations

D4 Averages and box plots

- D4.1 Large data sets - averages and range
- D4.2 Averages of grouped data
- D4.3 Frequency polygons
- D4.4 Time series
- D4.5 Time series and moving average

Examinations

Spring Term

S5 Constructions and loci

- S5.1 Bearings and scale drawings
- S5.2 Constructing triangles
- S5.3 Constructing bisectors
- S5.4 Further constructions
- S5.5 Loci

N7 Fraction and percentage calculations

- N7.1 Finding fractions of quantities
- N7.2 Finding a percentage of a quantity
- N7.3 Percentage increase and decrease
- N7.4 Simple and compound interest
- N7.5 More percentage techniques



GCSIE Course

S6 Perimeter, area and volume

- S6.1 3-D Solids: plans and elevations
- S6.2 Volume of prisms
- S6.3 Volume and surface area
- S6.4 Measures
- S6.5 Compound measures

A7 Graphical solutions

- A7.1 Plotting curves
- A7.2 Further curve plotting
- A7.3 Solving linear simultaneous equations graphically
- A7.4 Solving quadratic and cubic equations graphically
- A7.5 Solving quadratic and linear simultaneous equations

N8 Ratio and proportion

- N8.1 Introducing ratio
- N8.2 More ratio
- N8.3 Ratio and proportion
- N8.4 Ratio, proportion and percentages
- N8.5 Reverse percentages

Summer Term

S7 Enlargement and similarity

- S7.1 Enlargement
- S7.2 Fractional scale factors
- S7.3 Describing an enlargement
- S7.4 Similar shapes
- S7.5 Similar triangles

D6 Independent events

- D6.1 Probability revision
- D6.2 Independent events
- D6.3 Drawing tree diagrams
- D6.4 Using tree diagrams to find probability
- D6.5 Using tree diagrams to find harder probabilities

A8 Using graphs

- A8.1 Distance–time graphs
- A8.2 Other real-life graphs
- A8.3 Linear graphs in real life
- A8.4 Further linear graphs in real life
- A8.5 Using quadratic graphs

S8 Pythagoras and trigonometry

- S8.1 Tangent ratio
- S8.2 Sine and cosine ratios
- S8.3 Finding angles in right-angled triangles
- S8.4 Pythagoras' theorem and trigonometry
- S8.5 Trigonometry in problem solving