

# Yr 10

# GCSIE Course

## *Autumn Term*

### **N1 Integers and decimals**

- N1.1 Place value
- N1.2 Reading scales
- N1.3 Adding and subtracting negative numbers
- N1.4 Multiplying and dividing negative numbers
- N1.5 Factors and multiples

### **S1 Length, area and volume**

- S1.1 Metric and imperial measures
- S1.2 Perimeter and area of a rectangle and a triangle
- S1.3 Area of a parallelogram and a trapezium
- S1.4 Circumference and area of a circle
- S1.5 Volume of a cuboid

### **A1 Expressions**

- A1.1 Algebraic expressions
- A1.2 Indices
- A1.3 Brackets in algebra
- A1.4 Simplifying expressions
- A1.5 Factorising

### **N2 Decimal calculations**

- N2.1 Rounding
- N2.2 Mental addition and subtraction
- N2.3 Written addition and subtraction
- N2.4 Mental multiplication and division
- N2.5 Written multiplication and division

### **A2 Equations and inequalities**

- A2.1 Solving equations using function machines
- A2.2 Solving two-step equations
- A2.3 Solving equations using the balance method
- A2.4 Inequalities
- A2.5 Two-sided inequalities

### **D1 Collecting data**

- D1.1 Frequency tables
- D1.2 Observation, controlled experiment and sampling
- D1.3 Surveys and questionnaires
- D1.4 Grouped data
- D1.5 Two-way tables

## *Spring Term*

### **N3 Fractions, decimals and percentages**

- N3.1 Equivalent fractions
- N3.2 Adding and subtracting fractions
- N3.3 Multiplying and dividing fractions
- N3.4 Fractions, decimals and percentages
- N3.5 Ordering fractions, decimals and percentages

### **S2 Angles and circles**

- S2.1 Angles properties
- S2.2 Angles in quadrilaterals
- S2.3 Interior angles of a polygon
- S2.4 Exterior angles of a polygon
- S2.5 Angles in parallel lines



## **D2 Displaying data**

- D2.1 Diagrams and charts
- D2.2 Grouped frequency diagrams
- D2.3 Stem-and-leaf diagrams
- D2.4 Time series graphs
- D2.5 Scatter graphs

## **A4 Straight-line graphs**

- A4.1 Functions
- A4.2 Drawing linear graphs
- A4.3 More linear graphs
- A4.4 Horizontal and vertical graphs
- A4.5 Equations of straight lines

## **A3 Sequences**

- A3.1 Term-to-term rules
- A3.2 The general term
- A3.3 Finding the  $n$ th term
- A3.4 Pattern sequences
- A3.5 More pattern sequences

## *Summer Term*

### **Examinations**

### **Course Work**

## **D3 Probability**

- D3.1 Probability
- D3.2 Probability scale
- D3.3 Two-way tables
- D3.4 Expected frequency
- D3.5 Relative frequency

## **N4 Proportionality**

- N4.1 Proportion
- N4.2 Unitary method
- N4.3 Direct proportion
- N4.4 Exchange rates
- N4.5 Compound measures and speed

## **S3 Transformations**

- S3.1 Reflections
- S3.2 Rotations
- S3.3 Translations
- S3.4 Congruence
- S3.5 Symmetry

## **N5 Integers, powers and roots**

- N5.1 Squares and square roots
- N5.2 Cubes and cube roots
- N5.3 Powers and reciprocals
- N5.4 Standard index form for large numbers
- N5.5 Prime factor decomposition

## **A5 Formulae**

- A5.1 Formulae, equations and identities
- A5.2 Substituting into formulae
- A5.3 Writing formulae
- A5.4 Changing the subject of a formula
- A5.5 Proof

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## Autumn Term

### Reminder of D2

#### D5 Interpreting diagrams and charts

- D5.1 Diagrams and charts
- D5.2 More diagrams and charts
- D5.3 Stem-and-leaf diagrams
- D5.4 Time series graphs
- D5.5 Scatter graphs

### Course Work

#### S4 2-D and 3-D shapes

- S4.1 Properties of triangles
- S4.2 Properties of quadrilaterals
- S4.3 2-D and 3-D shapes
- S4.4 Plans and elevations
- S4.5 3-D coordinates

#### N6 Estimating and calculating

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

#### A6 More equations

- A6.1 Solving equations with brackets
- A6.2 Equations with the unknown on both sides
- A6.3 More equations with brackets
- A6.4 Equations with fractions
- A6.5 Trial and improvement

#### D4 Averages and range

- D4.1 Types of data and the range
- D4.2 Averages
- D4.3 Charts and tables
- D4.4 Comparing data
- D4.5 Grouped data

### Examinations

## Spring Term

#### S5 Constructions and loci

- S5.1 Bearings
- S5.2 Constructing triangles
- S5.3 Perpendicular lines
- S5.4 Angle bisectors
- S5.5 Loci

#### N7 Fraction and percentage calculations

- N7.1 Fraction of a quantity
- N7.2 Percentage of a quantity
- N7.3 Percentage increase and decrease
- N7.4 Percentage problems
- N7.5 Interest



# GCSE COURSE

# Foundation Plus

# Mathematics

## **S6 Perimeter, area and volume**

- S6.1 Surface area
- S6.2 Volume of a prism
- S6.3 2-D and 3-D measures
- S6.4 Compound measures
- S6.5 Dimensions

## **A7 Graphical solutions**

- A7.1 Drawing linear graphs
- A7.2 The equation of a straight line
- A7.3 Finding solutions from graphs
- A7.4 Solutions of more than one equation
- A7.5 Graphs of quadratic functions

## **N8 Ratio and proportion**

- N8.1 Introducing ratio
- N8.2 Calculating with ratio
- N8.3 More ratio problems
- N8.4 Ratio and rates
- N8.5 Proportional problems

## *Summer Term*

## **S7 Enlargement and similarity**

- S7.1 Maps and scale drawings
- S7.2 Enlargements
- S7.3 More enlargements
- S7.4 Similar shapes
- S7.5 Relationships

## **D6 Listing outcomes**

- D6.1 Probability revision
- D6.2 Mutually exclusive outcomes
- D6.3 Databases and random sampling
- D6.4 Two events
- D6.5 Two events again

## **A8 Real-life graphs**

- A8.1 Conversion graphs
- A8.2 Drawing conversion graphs
- A8.3 Distance-time graphs
- A8.4 Average speed
- A8.5 Real-life graphs

## **S8 Polygons and Pythagoras**

- S8.1 Tessellations
- S8.2 Using parallel lines
- S8.3 Pythagoras' theorem
- S8.4 More Pythagoras' theorem
- S8.5 Coordinates and Pythagoras'