Unit 1 – Number 1

Multiples and Factors

- Use the concepts and vocabulary of divisor, highest common factor, least (lowest) common multiple and prime factor decomposition ***(M2)***
- Find the LCM and HCF of numbers written as the product of their prime factors **(M3)**

Indices, Powers and Roots

- Use index notation and index laws for positive, whole number powers ***(M2)***

Accuracy and Bounds

- Round to a specified or appropriate number of significant figures ***(M2)***
- Calculate the upper and lower bounds in calculations involving addition and multiplication of numbers expressed to a given degree of accuracy **(M3)**

Growth and Decay

- Use percentage and repeated proportional change ***(M2)***
- Find the original quantity, given the result of a proportional change **(M3)**

Unit 2 – Algebra 2

The Language of Algebra

- Know the difference between an equation and an identity **(M3)**

Expressions

- Simplify and manipulate algebraic expressions by multiplying a single term over a bracket ***(M2)***
- Manipulate algebraic expressions by taking out common factors that are terms ***(M2)***
- Multiply two linear expressions **(M3)**
- Factorise quadratic expressions of the form x2+bx+c **(M3)**
- Factorise using the difference of two squares **(M3)**

Equations

- Set up and solve linear equations in one unknown, including those with the unknown on both sides of the equation and equations of the form x/4 +3 = 7 ***(M2)***
- Set up and solve linear equations of the form 4a+3/10 + 6a-5/5 = 13/2 **(M3)**
- Set up and solve quadratic equations using factors **(M3)**

Algebracic Fractions

- Add or subtract algebraic fractions, for example simplify 4a+3/10 + 6a-5/5 **(M3)**
- Simplify, multiply and divide algebraic fractions with linear or quadratic numerators and denominators **(M3)**

Unit 3 - Geometry and Measures 1

Perimeter

- Calculate perimeters of kite, parallelogram, rhombus and trapezium ***(M2)***
- Calculate perimeters of composite shapes ***(M2)***

Area

- Calculate areas of kite, parallelogram, rhombus and trapezium ***(M2)***
- Calculate areas of composite shapes ***(M2)***

Volume

- Calculate volumes of right prisms ***(M2)***

Pythagoras and Trigonometry

- Use Pythagoras' theorem in 2D problems ***(M2)***
- Understand and use the trigonometric ratios of sine, cosine and tangent to solve 2D problems, including those involving angles of elevation and depression **(M3)**

Unit 4 – Number 2

Working With Money

- Calculate with money and solve problems in a financial context for example compound interest, insurance, taxation, mortgages and investments ***(M2)***

Working With Fractions

- Add, subtract, multiply and divide fractions, including mixed number ***(M2)***

Working With Decimals

- Add, subtract, multiply and divide decimals of any size ***(M2)***

Fractions and Decimals

- Recognise that recurring decimals are exact fractions and that some exact fractions are recurring decimals ***(M2)***

Unit 5 – Geometry and Measures 2

Shape Properties

- Identify and apply circle definitions and properties, including tangent, arc, sector and segment. **(M3)**

Unit 6 – Handlng Data 1

Mean, Mode, Median and Range

- Estimate mean from a grouped frequency distribution ***(M2)***
- Identify the modal class and the median class from a grouped frequency distribution ***(M2)***
- Calculate quartiles and inter-quartile range from ungrouped data and understand their uses **(M3)**
- Estimate the median, quartiles and interquartile range **(M3)**

Sampling

- Infer properties of populations or distributions from a sample and know the limitations of doing so **(M3)**

Scatter Graphs

- Draw and/or use lines of best fit by eye, understanding what these lines represent ***(M2)***
- Draw conclusion from scatter diagrams ***(M2)***
- Use terms such as positive correlation, negative correlation and little or no correlation **(M3)**
- Interpolate and extrapolate from data and know the dangers of doing so **(M3)**
- Identify outliers **(M3)**
- Appreciate that correlation does not imply causality **(M3)**

Using Statistical Diagrams

- Use 3 circle Venn diagrams to sort data ***(M2)***

Unit 7 – Algebra 2

Co-Ordinate Geometry

- Find the midpoint and length of a line in 2D co-ordinates ***(M2)***
- Find the equation of a line through two given points or through one point with a given gradient **(M3)**
- Understand and use the gradients of parallel lines **(M3)**

Graphs and Gradients

- Find and interpret gradients and intercepts of linear graphs, for example plot and interpret the graph of hiring a car at £40 per day plus a cost of 20p per mile ***(M2)***
- Understand that the form y = mx +c represents a straight line and that m is the gradient of the line and c is the value of the y intercept **(M3)**

Unit 8 – Handling Data 2

Box Plots

- Calculate quartiles and inter-quartile range from ungrouped data and understand their uses **(M3)**
- Display information using box plots **(M3)**

Cumulative Frequency Graphs

- Construct and interpret cumulative frequency tables and the cumulative frequency curve **(M3)**
- Estimate the median, quartiles and interquartile range **(M3)**

Unit 9 – Geometry and Measures 3

Mensuration Problems

- Solve mensuration problems that involve arc length and area of a sector and surface area and volume of a cylinder, cone or sphere **(M3)**

Compound Mesures and Units

- Use compound measures and units such as density and kg/m3 ***(M2)***
- Use compound measures and units such as pressure and N/m2 **(M3)**