

Unit 1 – Number 1

Working with Ratio

- use ratio notation, including reduction to its simplest form and its various links to fraction notation **(M5)**
- divide a quantity in a given ratio **(M5)**
- apply ratio and proportion to real life contexts and problems such as conversion, best buy, comparison, scaling, mixing concentrations and exchange rates **(M5)**

Estimations and Approximations

- estimate answers and check calculations using approximation and estimation **(M5)**

Number Systems

- understand the principles of number systems **(M6)**
- convert numbers from decimal to binary (base 2) and vice versa **(M6)**

Unit 2 – Algebra 1

Equations

- use systematic trial and improvement to find approximate solutions of equations where there is no simple analytic method for solving them **(M6)**

Expressions and Formulae

- change the subject of a simple formula **(M6)**

Inequalities

- solve linear inequalities in one variable, and represent the solution set on a number line **(M6)**

Indices

- use index laws in algebra for positive powers **(M6)**

Sequences

- recognise and use sequences of, for example triangular, square and cube numbers **(M5)**
- generate terms of a sequence using term-to-term or a position-to-term rule **(M5)**
- find the n th term of a sequence where the rule is linear **(M6)**

Unit 3 – Geometry and Measures 1

Enlargements

- describe and transform 2D shapes using enlargements by a positive whole number scale factor **(M5)**

Reflections

- describe and transform 2D shapes using reflections about the x and y axes **(M5)**
- describe and transform 2D shapes using reflections in lines parallel to the x or y axes **(M6)**

Rotations

- describe and transform 2D shapes using single rotations about the origin **(M5)**
- describe and transform 2D shapes using rotations about any point **(M6)**

Translations

- describe and transform 2D shapes using translations **(M5)**
- describe and transform 2D shapes using translations, to include using vector notation **(M6)**

Transformations

- describe and transform 2D shapes using single transformations **(M5)**
- distinguish properties that are preserved under particular transformations **(M6)**

Similarity

- understand the effect of enlargement on perimeter and area of shapes **(M6)**

Congruence

- understand the term congruent **(M6)**

Unit 4 - Number 2

Accuracy and Bounds

- solve problems involving whole numbers, fractions, decimals, and percentages without a calculator **(M5)**

M6

Unit 5 – Algebra 2

Using Graphs

- solve two linear simultaneous equations graphically **(M6)**
- generate points and plot graphs of simple quadratic functions and use these to find approximate solutions for points of intersection with lines of the form $y = +/- a$ only **(M6)**

Working with Graphs

- plot and interpret graphs modelling real situations, for example conversion graphs, distance/time graphs and intersecting travel graphs **(M5)**



Unit 6 – Geometry and Measures 2

Angle Properties

- use the sum of angles in a triangle, for example to deduce the angle sum in any polygon **(M5)**
- calculate and use the sums of interior and exterior angles of polygons **(M6)**

Drawings

- draw triangles and other 2D shapes using a ruler and a protractor **(M5)**

Working with Scale Drawings

- use and interpret maps, scale factors and scale drawings **(M5)**
- use and understand bearings **(M6)**

Working with Measures

- interpret scales on a range of measuring instruments and recognise the continuous nature of measurement and the approximate nature of measurement **(M5)**
- know and use imperial measures still in use and their approximate metric equivalents **(M5)**

Constructions

- use the standard ruler and compass constructions **(M6)**
- identify the loci of points, including real life problems **(M6)**

Unit 7 – Handling Data 1

Counting and Listing Outcomes

- list all outcomes for single events, and for two successive events **(M5)**
- apply systematic listing strategies **(M5)**
- systematically list all outcomes for single events and for two successive events **(M6)**

Experimental Probability

- work out probabilities expressed as fractions or decimals from simple experiments with equally likely outcomes and simple combined events **(M5)**
- understand and use estimates or measures of probability from theoretical models (including equally likely outcomes) or from relative frequency **(M6)**
- compare experimental data and theoretical probabilities **(M6)**
- understand that increasing sample size generally leads to better estimates of probability **(M6)**

Probability and Chance

- understand and use the vocabulary of probability including notions of uncertainty and risk **(M5)**
- use the terms fair, random, evens, certain, likely, unlikely and impossible **(M5)**
- understand and use the probability scale from 0 to 1 **(M5)**
- identify different mutually exclusive outcomes and know that the sum of the probabilities of all these outcomes is 1 **(M5)**
- understand the probability of an event not occurring is one minus the probability that it occurs **(M5)**
- use probabilities to calculate expectation **(M5)**