

Unit	Key content
N1. Calculations with integers	<ul style="list-style-type: none"> <li>understand and use place value (e.g. when working with very large or very small numbers )</li> <li>apply the four operations, including formal written methods, to integers</li> <li>use the correct order of operations (BIDMAS) including evaluating simple indices</li> <li>recognise and use relationships between operations, including inverse operations</li> </ul>
N2. Fractions, percentages, decimals	<ul style="list-style-type: none"> <li>understand and use place value (e.g. when working with very large or very small numbers ) and equivalence</li> <li>apply the four operations, including formal written methods, to decimals and fractions.</li> <li>calculate with percentages</li> <li>define percentage as 'number of parts per hundred' and express one quantity as a percentage or fraction of another</li> </ul>
N3. Ratio and proportion	<ul style="list-style-type: none"> <li>Ratios compare quantities and have no units</li> <li>Like fractions, ratios can be equivalent and can be cancelled</li> <li>Sharing quantities in a ratio</li> <li>Using scale in drawing and recipes</li> <li>Using proportional reasoning</li> </ul>
N4. Numbers and the number system	<ul style="list-style-type: none"> <li>use the concepts and vocabulary of prime numbers, factors (divisors), multiples, common factors, common multiples, HCF and LCM</li> <li>use positive integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4, 5</li> <li>recognise and use sequences of triangular, square and cube numbers, simple arithmetic progressions</li> </ul>
A1. Notation and manipulation	<ul style="list-style-type: none"> <li>x stands for a "mystery number"</li> <li>use and interpret algebraic notation and use the vocabulary of algebra</li> <li>simplify and manipulate algebraic expressions by collecting like terms and multiplying a single term over a bracket</li> <li>where appropriate, interpret simple expressions as functions with inputs and outputs</li> <li>substitute numerical values into formulae and expressions</li> <li>use conventional notation for priority of operations, including brackets</li> </ul>
A2. Equations, Formulae, Expressions and Identities	<ul style="list-style-type: none"> <li>recognise and use relationships between operations, including inverse operations (e.g. cancellation to simplify calculations and expressions)</li> <li>construct and solve linear equations in one unknown algebraically</li> <li>change the subject of a formula</li> <li>construct and use formulae</li> </ul>
A3. Sequences	<ul style="list-style-type: none"> <li>Understand the difference between a term to term and position to term sequence</li> <li>Find and use nth term rules</li> <li>Decide if a number is in a sequence and justify the decision</li> </ul>
A4. Functions and Graphs	<ul style="list-style-type: none"> <li>Any linear relationship can be shown graphically and has the form <math>y=mx+c</math></li> <li>Identify the key features of a graph</li> <li>Use real life graphs and interpret them in context</li> </ul>
G1. Properties of shapes and transformations	<ul style="list-style-type: none"> <li>Know the different types of transformations and which lead to congruent shapes and which lead to similar shapes</li> <li>Rotate, reflect, translate and enlarge 2D shapes drawn on a coordinate grid</li> <li>Identify transformations given the object and image drawn on a coordinate grid.</li> </ul>
G2. Measuring angles and construction	<ul style="list-style-type: none"> <li>Measure angles accurately <math>\pm 2^{\circ}</math></li> <li>Construct standard constructions using ruler and compasses and construct triangles.</li> <li>Understand congruence and similarity</li> <li>Sketch loci</li> <li>Use Pythagoras and trigonometry in right angled triangles</li> </ul>
G3. Perimeter, area and volume	<ul style="list-style-type: none"> <li>Calculate perimeter, area and volume of 2d shapes including circles and find arc lengths and areas of sectors</li> <li>Solve multistep-problems involving area, perimeter and volume.</li> </ul>
G4. Angle calculations, Pythagoras and trigonometry	<ul style="list-style-type: none"> <li>Find missing angles and justify methods</li> <li>Using Pythagoras and trigonometry to solve problems using right angled triangles</li> </ul>
S1. Probability	<ul style="list-style-type: none"> <li>Probability is chance and is a random and unpredictable process.</li> <li>Probabilities can be written as a fraction, percentage or decimal and sum to 1.</li> <li>Experimental probability is more accurate if more measurements are taken</li> <li>Tables, lists and tree diagrams are used to show combined events and the probability of combined events can be calculated using the AND and OR rules</li> </ul>

S2. Interpreting data	<ul style="list-style-type: none"><li>• Understand different types of data</li><li>• Calculate averages and range</li><li>• Problem solve using averages</li><li>• Worked with grouped data</li></ul>
S3. Presenting data	<ul style="list-style-type: none"><li>• All graphs need SALT</li><li>• Select the most appropriate graph and justify choices</li><li>• Recognize when data is continuous and should be grouped</li><li>• Interpreting graphs</li></ul>