

### Year 7 Maths Curriculum Map

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| <b>Curriculum Vision</b>    | Mathematics develops resilience, logical reasoning, and confidence in problem solving, equipping students with essential analytical and quantitative skills to tackle real-world challenges such as managing finances, interpreting data, and understanding technology. It supports informed decision-making and enables learners to engage with global issues including climate change, public health, and economic inequality. Through analysing and interpreting data, students are empowered to recognise and challenge societal inequities, fostering fairness and equity. At the same time, mathematics inspires curiosity by revealing patterns and structures that underpin the modern world. Ultimately, it combines practical relevance with intellectual depth, preparing learners to contribute meaningfully to their communities and wider society.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                               |                                                                                           |
| <b>Domains of Knowledge</b> | <ul style="list-style-type: none"> <li>• Number</li> <li>• Algebra</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <ul style="list-style-type: none"> <li>• Geometry</li> <li>• Ratio</li> </ul> | <ul style="list-style-type: none"> <li>• Statistics</li> <li>• Problem Solving</li> </ul> |
| <b>End points (KS3)</b>     | <p><b>Number</b> – Students will confidently use integers, decimals, fractions, and percentages in calculations and problem solving. They will apply place value, rounding, and estimation strategies, work with powers and roots, and use standard form for large and small numbers. Students will fluently convert between number forms and apply the four operations in both mathematical and real-life contexts with accuracy and efficiency.</p> <p><b>Algebra</b> – Students will confidently manipulate algebraic expressions, including expanding, factorising, and rearranging. They will solve linear and quadratic equations, work with inequalities, and interpret and generate sequences. Students will represent relationships using graphs, including straight lines and quadratics, and apply algebra to model and solve problems in a range of contexts.</p> <p><b>Geometry</b> – Students will confidently solve problems involving 2D and 3D shapes, including perimeter, area, surface area, and volume. They will apply angle rules, use geometric transformations, and interpret scale drawings, plans, and elevations. Students will apply Pythagoras’ Theorem and trigonometry, solve problems using circle geometry, and construct and interpret loci and bearings. They will also use vector notation and apply similarity and congruence to solve geometric problems with precision.</p> <p><b>Ratio</b> – Students will simplify and use ratios and proportions in a variety of contexts, including scaling and recipe problems. They will solve problems involving multiplicative reasoning, including percentages, exchange rates, and compound measures such as speed, density, and pressure. Students will apply proportional reasoning across different topics including geometry and algebra.</p> <p><b>Statistics</b> – Students will collect, represent, and interpret data using tables, charts, and graphs including bar charts, stem-and-leaf diagrams, and grouped frequency tables. They will calculate and interpret mean, median, mode, and range, and estimate averages from grouped data. Students will also evaluate the reliability of data through sampling and summary statistics.</p> <p><b>Problem Solving</b> – Students will apply mathematical skills to unfamiliar, multi-step problems, selecting appropriate strategies and justifying their methods. They will link concepts across topics, interpret real-world scenarios mathematically, and communicate solutions clearly using accurate reasoning, representations, and notation. Students will check their work for accuracy and reflect on alternative approaches.</p> |                                                                               |                                                                                           |

| Term        | Weeks | Domain     | Key Concepts                   | Broken Down Knowledge                                                                                                                                                                                                  |
|-------------|-------|------------|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Y7 Autumn 1 | 2     | Statistics | 1a,b Tables, charts and graphs | Represent, read, interpret, and analyse data using pictograms, bar charts, coordinates, frequency tables, two-way tables, and stem-and-leaf diagrams, including calculating totals, differences, and basic statistics. |
| Y7 Autumn 1 | 1     | Statistics | 1c Pie Charts                  | Draw, interpret, and compare pie charts with any proportions, including calculating frequencies from angles, measuring angles, and understanding the limitations of pie charts.                                        |
| Y7 Autumn 1 | 1     | Statistics | 1d Scatter Graphs              | Plot, interpret, and analyse scatter graphs, including identifying outliers, describing the strength and type of correlation, understanding that correlation does not imply causation, and summarising data.           |
| Y7 Autumn 1 | 1     | Number     | 2a Integers and Place Value    | Understand place value, rounding, negative numbers, and perform four operations confidently.                                                                                                                           |

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| Y7 Autumn 1                                  | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Number             | 2b Decimals                                             | Calculate with decimals, round to decimal places and significant figures, and estimate results.                                                                                                                                                                     |
| Y7 Autumn 1                                  | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Number             | 2c Indices, powers and roots                            | Use powers, roots, and standard form in calculations.                                                                                                                                                                                                               |
| Y7 Autumn 1                                  | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Number             | 2d Factors, multiples and primes                        | Identify factors, multiples, primes, and use prime factorisation.                                                                                                                                                                                                   |
| <b>TOPIC TEST 1 covering Units 1 &amp; 2</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                                                         |                                                                                                                                                                                                                                                                     |
| Y7 Autumn 2                                  | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Algebra            | 3a Algebra: the basics                                  | Simplify algebraic expressions using the rules of algebra.                                                                                                                                                                                                          |
| Y7 Autumn 2                                  | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Algebra            | 3b Expressions and substitution                         | Substitute into expressions and formulae, expand and factorise algebraic expressions.                                                                                                                                                                               |
| Y7 Autumn 2                                  | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Number             | 4a Fractions, Decimals and Percentages                  | Understand, represent, compare, and calculate with fractions, mixed numbers, decimals, and percentages, including equivalence, ordering, and all four operations in increasingly complex contexts.                                                                  |
| Y7 Autumn 2                                  | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Number             | 4b Percentages                                          | Calculate percentages of amounts, determine what percentage one number is of another, and find values after percentage changes using both non-calculator methods (chunking) and decimal multipliers in real-life contexts.                                          |
| <b>TOPIC TEST 2 covering Unit 3 &amp; 4</b>  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                                                         |                                                                                                                                                                                                                                                                     |
| Y7 Spring 1                                  | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Algebra            | 5a Equations and inequalities                           | Solve linear equations and inequalities, represent solutions on a number line.                                                                                                                                                                                      |
| Y7 Spring 1                                  | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Algebra            | 5b Sequences                                            | Recognise, generate and describe arithmetic sequences using nth term rules.                                                                                                                                                                                         |
| Y7 Spring 1                                  | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Geometry           | 6a Properties of shapes, parallel lines and angle facts | Identify and use geometric properties of lines, angles, and shapes, apply angle rules (including parallel lines and polygons), measure and draw angles, use geometric notation, and solve increasingly complex angle problems and proofs                            |
| Y7 Spring 2                                  | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Geometry           | 6b Interior and exterior angles of polygons             | Identify and classify triangles and quadrilaterals, calculate and use interior and exterior angles of regular and irregular polygons, determine unknown angles and number of sides, analyse tessellations, and justify results using geometric reasoning and proof. |
| Y7 Spring 2                                  | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Statistics         | 7a Statistics, sampling and the averages                | Calculate and interpret averages from data and frequency tables, including estimation from grouped data.                                                                                                                                                            |
| <b>TOPIC TEST 3 covering Unit 5,6,7</b>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                                                         |                                                                                                                                                                                                                                                                     |
| Y7 Spring 2                                  | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Geometry           | 8a Perimeter, area and volume                           | Calculate perimeter, area and volume of a variety of 2D and 3D shapes including compound shapes.                                                                                                                                                                    |
| Y7 Summer 1                                  | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Algebra            | 9a Real-life graphs                                     | Interpret and construct real-life graphs including distance-time and conversion graphs.                                                                                                                                                                             |
| Y7 Summer 1                                  | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Algebra            | 9b Straight-line graphs                                 | Understand and draw straight-line graphs, find gradients, and use $y = mx + c$ form.                                                                                                                                                                                |
| Y7 Summer 1                                  | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Geometry           | 10a Transformations                                     | Perform and describe transformations including translation, reflection, rotation, and enlargement.                                                                                                                                                                  |
| Y7 Summer 2                                  | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Ratio & Proportion | 11a Ratio                                               | Simplify and use ratios to solve problems, including sharing in a given ratio.                                                                                                                                                                                      |
| Y7 Summer 2                                  | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Ratio & Proportion | 11b Proportion                                          | Use multiplicative reasoning to solve problems involving proportion.                                                                                                                                                                                                |
| <b>TOPIC TEST 4 covering Unit 8,9,10,11</b>  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                    |                                                         |                                                                                                                                                                                                                                                                     |
| <b>Assessment</b>                            | Assessment is embedded throughout the curriculum, with topic tests conducted every 2–3 units. Each test lasts 40 minutes and is composed of a combination of 1-mark knowledge and recall questions alongside longer, multi-mark problem-solving questions. While summative in nature, these assessments are also used formatively to inform future teaching; they assess recently taught content alongside key concept retrieval questions (such as directed numbers, percentages, and algebraic |                    |                                                         |                                                                                                                                                                                                                                                                     |

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|  | <p>simplification) to support long-term retention, and teachers use the outcomes to revisit common areas of need identified across the class. Following each test, students receive a Question Level Analysis (QLA) that clearly identifies strengths and areas for development by topic, with Dr Frost website codes linked directly to support videos and practice.</p> |
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|  | <p>In addition, formative assessment takes place in every lesson through common Do It Now tasks, which focus on key concepts such as directed numbers, fractions–decimals–percentages, and algebraic basics. These tasks run for four weeks before changing to ensure interleaving of topics and promote long-term retention, alongside the use of mini whiteboards to regularly check understanding and enable timely reinforcement or reteaching.</p> |
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