

**CURRICULUM MAP (Long term plan)**

**SUBJECT:** Maths

**YEAR GROUP** 7

|  | <b>Cycle 1<br/>Autumn</b>   | <b>Cycle 2<br/>Spring</b>   | <b>Cycle 3<br/>Summer</b>  |
|--|---|---|--|
| <b>Substantive knowledge</b> – Essential knowledge & conceptual understanding of the National Curriculum | Number, geometry and statistics<br><b>N1 – Written methods, place value &amp; rounding</b><br><b>G1 – 2d and 3D shapes, area and perimeter</b><br><b>N2 – Number properties and types</b><br><b>S1 – Charts and averages</b><br><b>G2 – Angles and triangles</b><br><b>N3 – Decimals and directed numbers</b>   | Algebra, number, geometry and probability<br><b>A1 – Introduction to Algebra</b><br><b>N4 – Fractions</b><br><b>A2 – Coordinates</b><br><b>G3 – Quadrilaterals and shape properties</b><br><b>N5 – Percentages</b><br><b>P1 – The language of probability</b>   | Number and Proportion, Algebra and Geometry<br><b>G4 – Angle rules</b><br><b>A3 – Sequences</b><br><b>N6 – Ratio</b><br><b>N7- Order of operations</b><br><b>G5 – Simple transformations</b>   |
| <b>Disciplinary knowledge</b> - what skills are practised?   | <b>N1 – Written methods, place value &amp; rounding</b><br>- Written methods for addition, subtraction, multiplication and division with integers<br>- Reading and understanding place value<br>- Rounding to 10, 100, 1000<br>- Rounding to the nearest integer<br>- Rounding to decimal places<br>- Rounding to 1 significant figure<br>- Simple estimating using rounding<br><b>G1 – 2d and 3D shapes, area and perimeter</b><br>- Recognise and name 2D and 3D shapes<br>- Find perimeters of basic and compound shapes | <b>A1 – Introduction to Algebra</b><br>- Read and understand the terminology and structure of algebraic terms and expressions<br>- Collect like terms<br>- Add, subtract, multiply and divide simple terms<br>- Substitution<br><b>N4 – Fractions</b><br>- Shade and identify fractions drawings<br>- Find equivalent fractions<br>- Simplify fractions<br>- Convert improper fractions and mixed numbers<br>- Calculate fractions of amounts | <b>G4 – Angle rules</b><br>- Use the rules for angles on a straight line and at a point<br>- Use the rules for angles in triangles and quadrilaterals<br>- Use the rules for vertically opposite angles<br>- Identify and use the rules for angles in parallel lines (co-interior, corresponding, alternate)<br><b>A3 – Sequences</b><br>- Generate and describe patterns from pictures and numbers<br>- Identify and generate common sequences<br>- Generate and interpret term to term rules for sequences |

|  |  |  |   |
|--|--|--|---|
|  | <ul style="list-style-type: none"> <li>- Find areas of rectangles and triangles using formula and counting</li> <li>- Converting units of metric length</li> <li><b>N2 – Number properties and types</b></li> <li>- Identify types and properties of numbers (prime, multiple factor, square, cube, odd, even)</li> <li>- Find Prime factors</li> <li>- Find HCF and LCM by listing</li> <li><b>S1 – Charts and averages</b></li> <li>- Collect data and tally charts</li> <li>- Construct and interpret bar charts and pictograms</li> <li>- Calculate mean, mode, median and range</li> <li><b>G2 – Angles and triangles</b></li> <li>- Naming and classifying angles</li> <li>- Naming types of triangles</li> <li>- Drawing and measuring angles</li> <li><b>N3 – Decimals and directed numbers</b></li> <li>- Perform the four operations with decimals</li> <li>- Understand and order directed numbers</li> <li>- Perform the four operations with directed numbers</li> <li>- Solve problems involving money, mass and time</li> </ul> | <ul style="list-style-type: none"> <li>- Perform the four operations with fractions and mixed numbers</li> <li><b>A2 – Coordinates</b></li> <li>- Read and plot coordinates in 4 quadrants</li> <li>- Identify missing coordinates on shapes</li> <li><b>G3 – Quadrilaterals and shape properties</b></li> <li>- Classify quadrilaterals</li> <li>- Identify and draw line and rotational symmetry in shapes</li> <li>- Interpret and draw simple plans and elevations of simple shapes</li> <li>- Interpret nets of simple shapes</li> <li><b>N5 – Percentages</b></li> <li>- Find percentages of an amount without a calculator</li> <li>- Increase and decrease by a percentage</li> <li>- Match simple fractions decimals and percentages</li> <li>- Calculator methods with percentages</li> <li><b>P1 – The language of probability</b></li> <li>- Understand what is meant by a probability</li> <li>- Understand the language used to describe probability</li> <li>- Place probability language on a the probability scale</li> </ul> | <ul style="list-style-type: none"> <li><b>N6 – Ratio</b></li> <li>- Read and writing simple ratios</li> <li>- Sharing an amount in a given ratio</li> <li><b>N7- Order of operations</b></li> <li>- Understand and use the rules of bidmas</li> <li><b>G5 – Simple transformations</b></li> <li>- Identify and construct reflected shapes</li> <li>- Identify and construct rotated shapes</li> <li>- Identify a translation and translate a shape</li> </ul> |
|--|--|--|---|

|   |   |   |   |
|---|---|---|---|
| <p><b>Key questions</b><br/>(What is the learning about?)</p>     | <p>Can students understand the difference between rounding to decimal places, powers of 10 and significant figures?<br/>Have students got secure methods for the four operations with whole numbers and decimals?<br/>Are students able to apply four operations knowledge to real life problems?<br/>Can students recognise that multiplicative reasoning applies to shape as well as calculations?<br/>Can students use the four operations with both positive and negative integers?<br/>Can students differentiate between composite and prime numbers?</p> | <p>Can students use algebra to generalise the structure of arithmetic, including formulating maths relationships?<br/>Can students use decimal multipliers to calculate percentages and percentage changes? Can they check this with a written method estimation?<br/>Can students link their understanding of polygon properties to the cartesian plane?<br/>Do students understand the reason we need fractions in their lowest terms but also what we need equivalent fractions?<br/>Are students able to manipulate and simplify expressions?</p> | <p>Are students able to use the standard conventions for labelling lines and angles?<br/>Are students able to apply BIDMAS knowledge throughout the curriculum?<br/>Are students able to recognise and use relationships between operations including inverse operations?<br/>Can students generate sequences from pictures and turn these into numerical sequences?<br/>Can students recognise common sequences and represent these with diagrams?</p> |
| <p><b>Assessment</b></p>  | <p>Live marking during the lesson with misconceptions addressed during the lesson.<br/>End of topic PPC for all topics<br/>Base line test<br/>EOTT</p>  | <p>Live marking during the lesson with misconceptions addressed during the lesson.<br/>End of topic PPC for all topics<br/>EOTT</p>   | <p>Live marking during the lesson with misconceptions addressed during the lesson.<br/>End of topic PPC for all topics<br/>EOYT</p>   |
| <p><b>Literacy (L), Numeracy (N), Oracy (O) opportunities</b></p> | <p>Word problems presented to students each lesson where they have to understand the mathematical vocabulary to solve the problems. Answers to questions posed by the teachers are answered using mathematical language with reasoning where appropriate developing key vocabulary and confidence in talking mathematically. Peer on peer support when answering questions in class. Key words are displayed at the beginning of a new lesson. Spellings are corrected during live marking and book reviews.</p>  |   |   |
| <p><b>Cross Curricular Opportunities</b></p>                      | <p>Links to Citizenship and money.</p>  | <p>Directed number has links to Science (temperature). Algebra with ICT.</p>  | <p>Drawing, measuring and constructing has links to DT and Art.</p>   |
| <p><b>Super Curriculum</b></p>                                    | <p>F1 Maths in Motion Club<br/>UKMT Challenge<br/>Sparx maths</p>   | <p>F1 Maths in Motion Club<br/>UKMT Challenge<br/>Sparx maths</p>   | <p>F1 Maths in Motion Club and Trip<br/>UKMT Challenge<br/>Sparx maths<br/>HFL maths challenge</p>  |

|  |  |     |     |
|--|--|-----|-----|
| <b>Careers</b>   | <p>Careers will be referenced within the teaching of each topic outlining how maths is used in a vast array of careers - not just at university level.</p> <p>Inspiring careers using maths:<br/>         How to become an <a href="#">electrician</a><br/>         Maths in becoming a <a href="#">tree surgeon</a><br/>         Becoming a <a href="#">master carpenter</a> in a theatre</p>   |     |     |
| <b>Equality and Diversity</b><br>Gender<br>Disability<br>Religion<br>Race<br>Sexuality   | <p>Diverse representation used with slides presented to students.</p> <p>Maths display boards has a Mathematician of the Month and also Famous Mathematicians from Around the World.</p> <p><a href="#">How kids make things fair</a> - video on sharing<br/> <a href="#">Two stones</a> game from Korea<br/> <a href="#">Egyptian multiplication</a> method</p>   |     |     |
| <b>Local Community Links</b>   | N/A  | N/A | N/A |
| <b>British Values</b><br>Democracy<br>The rule of Law<br>Individual Liberty<br>Mutual Respect and Tolerance of others<br>SMSC<br>Character Education | <p>Across the school, we encourage respect including teaching the value of listening to others views and opinions on problem solving. Students know it is okay to make mistakes and know this is how we learn; we encourage students to find their specific errors and then learn from these leading to deeper learning.</p> <p>In classrooms, we look for opportunities for pupils to use mini-whiteboards to promote self-esteem and build self-confidence. Collaborative learning in the classroom is encouraged in the form of listening and learning from each other which develops their mathematical voice and logical reasoning skills. We participate in team maths challenges for increased pupil involvement.</p> <p>We explicitly teach areas of Maths in lots of different subjects across the school to show students the importance of Maths in different roles, for example: statistics in Geography and Science; finance in Citizenship; chronology in History and proportion in Food Tech.</p> |     |     |