

## Year 7 Maths Curriculum Plan

	Key questions	Overview of the module	Assessment	Cross Curricular Skills	Suggested reading material and websites:
<b>Module 1</b>  <b>Numbers</b>	<ul style="list-style-type: none"> <li>When using Eratosthenes sieve to identify prime numbers, why is there no need to go further than the multiples of 7? If this method was extended to test prime numbers up to 200, how far would you need to go? Convince me.</li> <li>Kenny says '20 is a square number because <math>10^2 = 20</math>'. Explain why Kenny is wrong. Kenny is partially correct. How could he change his statement so that it is fully correct?</li> <li>Always / Sometimes / Never: The lowest common multiple of two numbers is found by multiplying the two numbers together.</li> </ul>	<ul style="list-style-type: none"> <li>use the concepts and vocabulary of prime numbers, factors (divisors), multiples, common factors, common multiples, highest common factor and lowest common multiple</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>	<p>Students will sit a short diagnostic assessment at before the start of each topic to inform teaching.</p> <p>The unit finishes with an End of Unit Test. The department emails results to parents including improvements highlighted in pink. Students complete full corrections on tests to ensure they understand the entire unit before moving on.</p>	<p><b>Literacy:</b>            ((Lowest) common) multiple and LCM            ((Highest) common) factor and HCF            Power            (Square and cube) root            Triangular number, Square number, Cube number, Prime number            Linear sequence</p> <p><b>Thinking Skills:</b>            Students are supported to develop high level problem solving skills, applying challenging mathematical concepts to a range of unforeseen, multi-step problems. They will also be encouraged to infer the meaning of new vocabulary and deduce different methods of working.</p>	<p><a href="http://www.kerboodle.com">www.kerboodle.com</a></p> <p><a href="http://www.mymaths.co.uk/">www.mymaths.co.uk/</a></p> <p><a href="http://www.khanacademy.org/">www.khanacademy.org/</a></p> <p><a href="https://campus.mangahigh.com">https://campus.mangahigh.com</a></p> <p><a href="http://www.bbc.co.uk/education/subjects/z38pycw">www.bbc.co.uk/education/subjects/z38pycw</a></p> <p><a href="https://nrich.maths.org/">https://nrich.maths.org/</a></p>

<p><b>Module 2</b></p> <p><b>Counting and Comparing</b></p>	<ul style="list-style-type: none"> <li>Jenny writes down <math>0.400 &gt; 0.58</math>. Kenny writes down <math>0.400 &lt; 0.58</math>. Who do you agree with? Explain your answer.</li> <li>Find a fraction which is greater than <math>\frac{3}{5}</math> and less than <math>\frac{7}{8}</math>. And another. And another ...</li> <li>Convince me that <math>-15 &lt; -3</math></li> </ul>	<ul style="list-style-type: none"> <li>order positive and negative integers, decimals and fractions</li> <li>use the symbols <math>=, \neq, &lt;, &gt;, \leq, \geq</math></li> </ul>	<p>Students will sit a short diagnostic assessment at before the start of each topic to inform teaching.</p> <p>The unit will be followed by an end of unit assessment.</p> <p>These assessments are stored and marked on a system called MiniTest. This allows us to track the progress made throughout the topic.</p> <p>A copy of the end of unit assessment will be emailed to parents and students as well as being recorded in their work book.</p>	<p><b>Literacy:</b> Positive number Negative number Integer Numerator Denominator</p> <p><b>Thinking Skills:</b> Students are supported to develop high level problem solving skills, applying challenging mathematical concepts to a range of unforeseen, multi-step problems. They will also be encouraged to infer the meaning of new vocabulary and deduce different methods of working.</p>	<p><a href="http://www.kerboodle.com">www.kerboodle.com</a></p> <p><a href="http://www.mymaths.co.uk/">www.mymaths.co.uk/</a></p> <p><a href="http://www.khanacademy.org/">www.khanacademy.org/</a></p> <p><a href="https://campus.mangahigh.com">https://campus.mangahigh.com</a></p> <p><a href="http://www.bbc.co.uk/education/subjects/z38pycw">www.bbc.co.uk/education/subjects/z38pycw</a></p> <p><a href="https://nrich.maths.org/">https://nrich.maths.org/</a></p>
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<p><b>Module 3</b></p> <p><b>Calculating</b></p>	<ul style="list-style-type: none"> <li>Jenny says that <math>2 + 3 \times 5 = 25</math>. Kenny says that <math>2 + 3 \times 5 = 17</math>. Who is correct? How do you know?</li> <li>Find missing digits in otherwise completed long multiplication / short division calculations</li> <li>Show me a calculation that is connected to <math>14 \times 26 = 364</math>. And another. And another ...</li> </ul>	<ul style="list-style-type: none"> <li>understand and use place value (e.g. when working with very large or very small numbers, and when calculating with decimals)</li> <li>apply the four operations, including formal written methods, to integers and decimals</li> <li>use conventional notation for priority of operations, including brackets</li> <li>recognise and use relationships between operations, including inverse operations (e.g. cancellation to simplify calculations and expressions)</li> </ul>	<p>Students will sit a short diagnostic assessment at before the start of each topic to inform teaching.</p> <p>The unit will be followed by an end of unit assessment.</p> <p>These assessments are stored and marked on a system called MiniTest. This allows us to track the progress made throughout the topic.</p> <p>A copy of the end of unit assessment will be emailed to parents and students as well as being recorded in their work book.</p>	<p><b>Literacy:</b></p> <p>Improper fraction Top-heavy fraction Mixed number Operation Inverse Long multiplication Short division Long division Remainder</p> <p><b>Thinking Skills:</b></p> <p>Students are supported to develop high level problem solving skills, applying challenging mathematical concepts to a range of unforeseen, multi-step problems. They will also be encouraged to infer the meaning of new vocabulary and deduce different methods of working.</p>	<p><a href="http://www.kerboodle.com">www.kerboodle.com</a></p> <p><a href="http://www.mymaths.co.uk/">www.mymaths.co.uk/</a></p> <p><a href="http://www.khanacademy.org/">www.khanacademy.org/</a></p> <p><a href="https://campus.mangahigh.com">https://campus.mangahigh.com</a></p> <p><a href="http://www.bbc.co.uk/education/subjects/z38pycw">www.bbc.co.uk/education/subjects/z38pycw</a></p> <p><a href="https://nrich.maths.org/">https://nrich.maths.org/</a></p>
<p><b>Module 4</b></p> <p><b>Visualising and Constructing</b></p>	<ul style="list-style-type: none"> <li>Given SSS, how many different triangles can be constructed? Why? Repeat for ASA, SAS, SSA, AAS, AAA.</li> <li>Always / Sometimes / Never: to draw a triangle you need to know the size of three angles; to draw a triangle you need to know the size of three sides.</li> <li>Convince me that a hexagon can have</li> </ul>	<ul style="list-style-type: none"> <li>use conventional terms and notations: points, lines, vertices, edges, planes, parallel lines, perpendicular lines, right angles, polygons, regular polygons and polygons with reflection and/or rotation symmetries</li> <li>use the standard conventions for labelling and referring to the sides and angles of triangles</li> <li>draw diagrams from written description</li> </ul>	<p>Students will sit a short diagnostic assessment at before the start of each topic to inform teaching.</p> <p>The unit will be followed by an end of unit assessment.</p> <p>These assessments are stored and</p>	<p><b>Literacy:</b></p> <p>Edge, Face, Vertex (Vertices) Plane Parallel Perpendicular Regular polygon Rotational symmetry</p> <p><b>Thinking Skills:</b></p> <p>Students are supported to develop high level problem solving skills, applying challenging</p>	<p><a href="http://www.kerboodle.com">www.kerboodle.com</a></p> <p><a href="http://www.mymaths.co.uk/">www.mymaths.co.uk/</a></p> <p><a href="http://www.khanacademy.org/">www.khanacademy.org/</a></p> <p><a href="https://campus.mangahigh.com">https://campus.mangahigh.com</a></p> <p><a href="http://www.bbc.co.uk/education/subjects/z38pycw">www.bbc.co.uk/education/subjects/z38pycw</a></p> <p><a href="https://nrich.maths.org/">https://nrich.maths.org/</a></p>

	rotational symmetry with order 2.		<p>marked on a system called MiniTest. This allows us to track the progress made throughout the topic.</p> <p>A copy of the end of unit assessment will be emailed to parents and students as well as being recorded in their work book.</p>	<p>mathematical concepts to a range of unforeseen, multi-step problems. They will also be encouraged to infer the meaning of new vocabulary and deduce different methods of working.</p>	
<p><b>Module 5</b></p> <p><b>Properties of Shapes</b></p>	<ul style="list-style-type: none"> <li>Show me an example of a trapezium. And another. And another ...</li> <li>Always / Sometimes / Never: The number of vertices in a 3D shape is greater than the number of edges</li> <li>Which quadrilaterals are special examples of other quadrilaterals? Why? Can you create a 'quadrilateral family tree'?</li> <li>What is the same and what is different: Rhombus / Parallelogram?</li> </ul>	<ul style="list-style-type: none"> <li>identify properties of the faces, surfaces, edges and vertices of: cubes, cuboids, prisms, cylinders, pyramids, cones and spheres</li> <li>derive and apply the properties and definitions of: special types of quadrilaterals, including square, rectangle, parallelogram, trapezium, kite and rhombus; and triangles and other plane figures using appropriate language</li> </ul>	<p>Students will sit a short diagnostic assessment at before the start of each topic to inform teaching.</p> <p>The unit will be followed by an end of unit assessment.</p> <p>These assessments are stored and marked on a system called MiniTest. This allows us to track the progress made throughout the topic.</p> <p>A copy of the end of unit assessment will be emailed to parents and students as well</p>	<p><b>Literacy:</b> Face, Edge, Vertex (Vertices) Cube, Cuboid, Prism, Cylinder, Pyramid, Cone, Sphere Quadrilateral Square, Rectangle, Parallelogram, (Isosceles) Trapezium, Kite, Rhombus Delta, Arrowhead Diagonal Perpendicular Parallel Triangle Scalene, Right-angled, Isosceles, Equilateral</p> <p><b>Thinking Skills:</b> Students are supported to develop high level problem solving skills, applying challenging mathematical concepts to a range of unforeseen, multi-step problems. They will also be encouraged to</p>	<p><a href="http://www.kerboodle.com">www.kerboodle.com</a></p> <p><a href="http://www.mymaths.co.uk/">www.mymaths.co.uk/</a></p> <p><a href="http://www.khanacademy.org/">www.khanacademy.org/</a></p> <p><a href="https://campus.mangahigh.com">https://campus.mangahigh.com</a></p> <p><a href="http://www.bbc.co.uk/education/subjects/z38pycw">www.bbc.co.uk/education/subjects/z38pycw</a></p> <p><a href="https://nrich.maths.org/">https://nrich.maths.org/</a></p>

			as being recorded in their work book.	infer the meaning of new vocabulary and deduce different methods of working.	
<b>Module 6</b>  <b>Algebraic Proficiency</b>	<ul style="list-style-type: none"> <li>Show me an example of an expression / formula / equation</li> <li>Always / Sometimes / Never: <math>4(g+2) = 4g+8</math>, <math>3(d+1) = 3d+1</math>, <math>a^2 = 2a</math>, <math>ab = ba</math></li> <li>Jenny writes <math>2a + 3b + 5a - b = 7a + 3</math>. Kenny writes <math>2a + 3b + 5a - b = 9ab</math>. What would you write? Why?</li> </ul>	<ul style="list-style-type: none"> <li>understand and use the concepts and vocabulary of expressions, equations, formulae and terms</li> <li>use and interpret algebraic notation, including: <math>ab</math> in place of <math>a \times b</math>, <math>3y</math> in place of <math>y + y + y</math> and <math>3 \times y</math>, <math>a^2</math> in place of <math>a \times a</math>, <math>a^3</math> in place of <math>a \times a \times a</math>, <math>a/b</math> in place of <math>a \div b</math>, brackets</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>	<p>Students will sit a short diagnostic assessment at before the start of each topic to inform teaching.</p> <p>The unit will be followed by an end of unit assessment.</p> <p>These assessments are stored and marked on a system called MiniTest. This allows us to track the progress made throughout the topic.</p> <p>A copy of the end of unit assessment will be emailed to parents and students as well</p>	<p><b>Literacy:</b></p> <p>Algebra Expression, Term, Formula (formulae), Equation, Function, Variable Mapping diagram, Input, Output Represent Substitute Evaluate Like terms Simplify / Collect</p> <p><b>Thinking Skills:</b> Students are supported to develop high level problem solving skills, applying challenging mathematical concepts to a range of unforeseen, multi-step problems. They will also be encouraged to infer the meaning of new vocabulary and deduce</p>	<p><a href="http://www.kerboodle.com">www.kerboodle.com</a></p> <p><a href="http://www.mymaths.co.uk/">www.mymaths.co.uk/</a></p> <p><a href="http://www.khanacademy.org/">www.khanacademy.org/</a></p> <p><a href="https://campus.mangahigh.com">https://campus.mangahigh.com</a></p> <p><a href="http://www.bbc.co.uk/education/subjects/z38pycw">www.bbc.co.uk/education/subjects/z38pycw</a></p> <p><a href="https://nrich.maths.org/">https://nrich.maths.org/</a></p>



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