



***Lessons have been designed to ensure you are secure in the foundations of Maths***

|                                                      | Autumn 1                                                                                                                                                                                                                                                                                                                                                                                                                     | Autumn 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Spring 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Spring 2                                                                                                                                                                                                                                                                                                                  | Summer 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Summer 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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| Year 6 Maths                                         | <p><b><u>Use knowledge of part-part-whole structure to solve additive problems</u></b></p> <p>In this unit pupils will identify the mathematical structures within stories and use their knowledge of additive structures to create stories and to solve problems.</p> <p><a href="#">Use knowledge of part-part-whole structure to solve additive problems KS2   Y6 Maths   Lesson Resources   Oak National Academy</a></p> | <p><b><u>Use equivalence and compensation to simplify and solve addition calculations</u></b></p> <p>In this unit pupils used the concept of same sum to simplify and solve addition problems.</p> <p><a href="#">Use equivalence and compensation to simplify and solve addition calculations KS2   Y6 Maths   Lesson Resources   Oak National Academy</a></p>                                                                                                                                             | <p><b><u>Use equivalence and compensation to simplify and solve subtraction problems</u></b></p> <p>In this unit pupils will explain how increasing or decreasing the minuend affects the difference and solve subtraction calculations mentally by using known facts explaining how adjusting the minuend can make mental calculation easier.</p> <p><a href="#">Use equivalence and compensation to simplify and solve subtraction problems KS2   Y6 Maths   Lesson Resources   Oak National Academy</a></p> | <p><b><u>Multiples of 1,000</u></b></p> <p>In this unit pupils will explain how one hundred thousand can be composed and read and write numbers up to one million.</p> <p><a href="#">Multiples of 1,000 KS2   Y6 Maths   Lesson Resources   Oak National Academy</a></p>                                                 | <p><b><u>Understand place value within numbers with up to 7 digits</u></b></p> <p>In this unit pupils will identify and place the position of 6-digit multiple of one thousand numbers, on a marked, but unlabelled number line They will read scales in graphing and measures contexts by using their knowledge of the composition of 10,000 and 100,000.</p> <p><a href="#">Understand place value within numbers with up to 7 digits KS2   Y6 Maths   Lesson Resources   Oak National Academy</a></p> | <p><b><u>Order, compare and calculate with numbers up to 8 digits</u></b></p> <p>In this unit pupils will use representations to identify and explain patterns in powers of 10 and read numbers with up to 7 digits efficiently. They will order and compare numbers with up to 8 digits and calculate with numbers of this scale.</p> <p><a href="#">Order, compare and calculate with numbers up to 8 digits KS2   Y6 Maths   Lesson Resources   Oak National Academy</a></p> |
| Key Substantive Knowledge: What will students learn? |                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Year 7 Maths                                         | <p><b><u>Place value</u></b></p> <p>In this unit pupils revisit, secure and develop their understanding of place value with integers, decimals, fractions, metric and imperial units. This knowledge is then extended to order and compare numbers of increasing complexity.</p> <p><a href="#">Place value KS3   Y7 Maths   Lesson Resources   Oak National Academy</a></p>                                                 | <p><b><u>Properties of number: factors, multiples, squares and cubes</u></b></p> <p>In this unit pupils develop their understanding of factors and multiples, then extend this knowledge to learn general divisibility tests for integers and develop strategies to determine the highest common factor and lowest common multiple of two or more integers.</p> <p><a href="#">Properties of number: factors, multiples, squares and cubes KS3   Y7 Maths   Lesson Resources   Oak National Academy</a></p> | <p><b><u>Arithmetic procedures with integers and decimals</u></b></p> <p>In this unit pupils develop their ability and efficacy with the four operations including more complicated and challenging calculations involving fractions, decimals and negative numbers. This leads into an exploration of the priority order of operations.</p> <p><a href="#">Arithmetic procedures with integers and decimals KS3   Y7 Maths   Lesson Resources   Oak National Academy</a></p>                                  | <p><b><u>Expressions and equations</u></b></p> <p>In this unit, pupils learn about generalisation and formal algebraic manipulation techniques such as substitution, collecting like terms and factorising.</p> <p><a href="#">Expressions and equations KS3   Y7 Maths   Lesson Resources   Oak National Academy</a></p> | <p><b><u>Plotting coordinates</u></b></p> <p>In this unit pupils revisit and further develop their understanding of the coordinate plane, and learn how to plot non-integer coordinates. Pupils then plot from an equation both by hand and by using technology.</p> <p><a href="#">Plotting coordinates KS3   Y7 Maths   Lesson Resources   Oak National Academy</a></p>                                                                                                                                | <p><b><u>Perimeter and area</u></b></p> <p>In this unit pupils investigate how to calculate the area and perimeter of rectilinear shapes, and composite shapes using rectangles and triangles. They will also derive simple area formulae.</p> <p><a href="#">Perimeter and area KS3   Y7 Maths   Lesson Resources   Oak National Academy</a></p>                                                                                                                               |
| Key Substantive Knowledge: What will students learn? |                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

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| <b><u>Year 8 Maths</u></b>                      | <b><u>Estimation and rounding</u></b><br><br>This unit helps pupils understand rounding to different decimal places, and significant figures. Pupils will also learn how to truncate numbers and understand the contexts in which these skills are useful. The unit ends with an exploration of rounding and inequality errors.<br><br><a href="#">Estimation and rounding KS3   Y8 Maths   Lesson Resources   Oak National Academy</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b><u>Sequences</u></b><br><br>In this unit we develop knowledge of sequences to be able to identify, determine, and continue arithmetic sequences. We finish the unit by looking at how sequences may be represented graphically.<br><br><a href="#">Sequences KS3   Y8 Maths   Lesson Resources   Oak National Academy</a> | <b><u>Graphical representations of linear equations</u></b><br><br>In this unit we develop understanding of linear relationships and explore the key features of a linear equation such as the gradient, intercept and determining an equation from coordinate pairs.<br><br><a href="#">Graphical representations of linear equations KS3   Y8 Maths   Lesson Resources   Oak National Academy</a> | <b><u>Solving linear equations</u></b><br><br>In this unit pupils will learn how to find a value that satisfies a linear relationship when one value is known both with a single step operation, and multiple step operations. A variety of cases are explored including using brackets and rearranging.<br><br><a href="#">Solving linear equations KS3   Y8 Maths   Lesson Resources   Oak National Academy</a> | <b><u>Understanding multiplicative relationships: percentages and proportionality</u></b><br><br>In this unit pupils explore multiplicative relationships with percentages, direct and inverse proportion.<br><br><a href="#">Understanding multiplicative relationships: percentages and proportionality KS3   Y8 Maths   Lesson Resources   Oak National Academy</a> | <b><u>Graphical representations of data</u></b><br><br>In this unit pupils will interpret and construct a range of representations of data including bar charts, pie charts and scatter graphs.<br><br><a href="#">Graphical representations of data KS3   Y8 Maths   Lesson Resources   Oak National Academy</a> |
| <b>National Curriculum links to topic</b>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                   |
| <b>National Curriculum links to topic Aims:</b> | There are three main aims of the national curriculum for mathematics: fluency, reasoning and problem solving. Our curriculum ensures that all pupils become fluent in the fundamentals of mathematics. For example, small steps when teaching the knowledge and understanding of counting, helps build fluency in simple addition and subtraction. Pupils are supported and encouraged to reason mathematically by justifying decisions when choosing whether something is true or false, providing the answer to a calculation or conjecturing when identifying patterns. Lastly, our curriculum ensures pupils can solve problems through lessons at the end of each unit that apply the knowledge they have learnt to new and sometimes unfamiliar contexts. A careful and purposeful sequencing of our curriculum content underpins its design, ensuring that pupils are able to build on and make links with existing knowledge. At its simplest this means ensuring, for example, that pupils learn about the square and square root functions before meeting Pythagoras' Theorem. Attention is paid to vertical coherence in the curriculum through the strategic mapping of mathematical concepts across the curriculum, allowing for their incremental development over time. Curriculum content is intentionally revisited, for example, a lesson on right-angled trigonometry may retrieve construction or circle theorem content, or a lesson on ratios will use familiar models and tools to explicitly link to prior learning. |                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                   |