

YEAR 3 MATHS CURRICULUM

Outlined below is the Year 3 Maths Curriculum which includes details of both the National Curriculum and the KPS Curriculum. The first column indicates what we have to teach with guidance for this given in the second column. The third column enhances the first by outlining our expectations based on our knowledge of the children of KPS and what we want them to learn and our expectations for their achievement and attainment.

	Programmes of Study STATUTORY	Notes and Guidance NON STATUTORY	Kexborough Primary School OUR EXPECTATIONS AND NON NEGOTIABLES
NUMBER – PLACE VALUE	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> ▪ count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number ▪ recognise the place value of each digit in a three-digit number (hundreds, tens, ones) ▪ compare and order numbers up to 1000 ▪ identify, represent and estimate numbers using different representations ▪ read and write numbers up to 1000 in numerals and in words ▪ solve number problems and practical problems involving these ideas. 	<p>Pupils now use multiples of 2, 3, 4, 5, 8, 10, 50 and 100.</p> <p>They use larger numbers to at least 1000, applying partitioning related to place value using varied and increasingly complex problems, building on work in year 2 (for example, $146 = 100 + 40 + 6$ and $146 = 130 + 16$).</p> <p>Using a variety of representations, including those related to measure, pupils continue to count in ones, tens and hundreds, so that they become fluent in the order and place value of numbers to 1000.</p>	<p><i>It is expected that the 'number strand' of the Year 3 curriculum be continually revisited during mental warm-up activities to provide the chn with a secure grounding of these vital concepts.</i></p> <p><i>Chn should Know what each digit in at least a 3-digit number represents, including 0 as the place holder and partition into H, T & U, with the more able chn having a consolidated understanding of the place value of even larger numbers.</i></p> <p><i>Whilst number squares may still be of use to chn in Year 3, they should be replaced with blank number squares as soon as possible, and not used at all when chn are confident enough to do this. Practical equipment, such as base ten, should be used regularly to ensure that chn have concrete concepts of the value of numbers.</i></p>

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NUMBER – ADDITION AND SUBTRACTION	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> ▪ add and subtract numbers mentally, including: <ul style="list-style-type: none"> ▪ a three-digit number and ones ▪ a three-digit number and tens ▪ a three-digit number and hundreds ▪ add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction ▪ estimate the answer to a calculation and use inverse operations to check answers ▪ solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. 	<p>Pupils practise solving varied addition and subtraction questions. For mental calculations with two-digit numbers, the answers could exceed 100.</p> <p>Pupils use their understanding of place value and partitioning, and practise using columnar addition and subtraction with increasingly large numbers up to three digits to become fluent (see Mathematics Appendix 1).</p>	<p><i>The 'Calculation Policy' is a non negotiable and MUST be followed to ensure consistency of approach and progression throughout school.</i></p> <p><i>To support rapid addition and subtraction, both mental and written, chn should know all addition and subtraction facts for each number to 20 and pairs of multiples of 10 to at least 100.</i></p> <p><i>They should be taught an increasing range of mental strategies to include adding and subtracting mentally a 'near multiple of 10' to or from a 2-digit number. Using the partitioning skills taught in KS1, chn should be able to add mentally using partitioning of numbers and mentally find differences between numbers.</i></p> <p><i>Chn should be taught using formal methods to support addition and subtraction.</i></p> <p><i>The operations of addition and subtraction should continue to be taught in a very contextualised way, with chn being encouraged to choose and use appropriate operations to solve word problems and explain methods & reasoning.</i></p> <p><i>There should be many opportunities for them to 'talk through' their Maths work in a collaborative way and it is expected that chn will be able to clearly articulate how they have solved a particular problem or calculation.</i></p>

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NUMBER – MULT AND DIV	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> ▪ recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables ▪ write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods ▪ solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects 	<p>Pupils continue to practise their mental recall of multiplication tables when they are calculating mathematical statements in order to improve fluency. Through doubling, they connect the 2, 4 and 8 multiplication tables.</p> <p>Pupils develop efficient mental methods, for example, using commutativity and associativity (for example, $4 \times 12 \times 5 = 4 \times 5 \times 12 = 20 \times 12 = 240$) and multiplication and division facts (for example, using $3 \times 2 = 6$, $6 \div 3 = 2$ and $2 = 6 \div 3$) to derive related facts (for example, $30 \times 2 = 60$, $60 \div 3 = 20$ and $20 = 60 \div 3$).</p> <p>Pupils develop reliable written methods for multiplication and division, starting with calculations of two-digit numbers by one-digit numbers and progressing to the formal written methods of short multiplication and division.</p> <p>Pupils solve simple problems in contexts, deciding which of the four operations to use and why. These include measuring and scaling contexts, (for example, four times as high, eight times as long etc.) and correspondence problems in which m objects are connected to n objects (for example, 3 hats and 4 coats, how many different outfits?; 12 sweets shared equally between 4 children; 4 cakes shared equally between 8 children).</p>	<p style="text-align: center;"><i>Calculation Policy MUST be followed</i></p> <p><i>At the basis of all multiplication and division teaching should be the chn's security in their knowledge of times tables, without which, their understanding of more advanced multiplication and division strategies will be adversely affected. In Year 3, chn should know by heart the 2, 5, 10, 4, 6 & 8 times tables, be able to count in steps of 2, 5, 10, 4, 6 & 8 and recognise multiples of 2, 5, 10, 4, 6 & 8. Along with this chn should be able to derive corresponding division facts quickly.</i></p> <p><i>Chn should be taught to multiply 2 digit number by a 1 digit number using the formal method of short multiplication.</i></p> <p><i>It is expected that chn understand division and have a clear recognition that it is the inverse of multiplication. They should carry out the division process by grouping, sharing or repeated subtraction and find remainders. However, by the end of Y3 children should be confident using short division (bus stop) to divide a 2 digit number by a 1 digit number (where the answer exceeds 12)</i></p> <p><i>In context, they should choose and use appropriate operations (including multiplication & division) to solve word problems and explain methods & reasoning. Oral explanation is vital, and chn should be given many opportunities to work collaboratively on investigations and explain their processes.</i></p>

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NUMBER - FRACTIONS	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> ▪ count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10 ▪ recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators ▪ recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators ▪ recognise and show, using diagrams, equivalent fractions with small denominators ▪ add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$] ▪ compare and order unit fractions, and fractions with the same denominators ▪ solve problems that involve all of the above. 	<p>Pupils connect tenths to place value, decimal measures and to division by 10.</p> <p>They begin to understand unit and non-unit fractions as numbers on the number line, and deduce relations between them, such as size and equivalence. They should go beyond the [0, 1] interval, including relating this to measure.</p> <p>Pupils understand the relation between unit fractions as operators (fractions of), and division by integers.</p> <p>They continue to recognise fractions in the context of parts of a whole, numbers, measurements, a shape, and unit fractions as a division of a quantity.</p> <p>Pupils practise adding and subtracting fractions with the same denominator through a variety of increasingly complex problems to improve fluency.</p>	<p><i>The teaching of fractions should be continually reinforced through the use of practical resources and activities to enable the chn to have a concrete concept of the idea of each fraction. This will aid them in adding and subtracting fractions, which again should be taught in a wholly practical concept.</i></p> <p><i>It must be ensured that chn recognise unit fractions such as $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{6}$, $\frac{1}{10}$ and use them to find fractions of shapes, objects and numbers.</i></p> <p><i>Class counting on and back in fractions during starters and informal 'maths times' will help chn to reinforce their understanding.</i></p>

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MEASUREMENT	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> ▪ measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) ▪ measure the perimeter of simple 2-D shapes ▪ add and subtract amounts of money to give change, using both £ and p in practical contexts ▪ tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks ▪ estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight ▪ know the number of seconds in a minute and the number of days in each month, year and leap year ▪ compare durations of events [for example to calculate the time taken by particular events or tasks]. 	<p>Pupils continue to measure using the appropriate tools and units, progressing to using a wider range of measures, including comparing and using mixed units (for example, 1 kg and 200g) and simple equivalents of mixed units (for example, 5m = 500cm).</p> <p>The comparison of measures includes simple scaling by integers (for example, a given quantity or measure is twice as long or five times as high) and this connects to multiplication.</p> <p>Pupils continue to become fluent in recognising the value of coins, by adding and subtracting amounts, including mixed units, and giving change using manageable amounts. They record £ and p separately. The decimal recording of money is introduced formally in year 4.</p> <p>Pupils use both analogue and digital 12-hour clocks and record their times. In this way they become fluent in and prepared for using digital 24-hour clocks in year 4.</p>	<p><i>As with the KS1 guidance, much reinforcement of time concepts should take place during informal 'calendar times' during registration. As part of their understanding of the concept of time, chn should be able to use the units of time and know the relationships between them.</i></p> <p><i>Chn should be given the opportunity to work with money in practical concepts and through real life situations, for example when planning a fund raising effort. They should be able to understand and use £.p notation with confidence.</i></p> <p><i>Measures should always be taught in a wholly practical context, with chn being encouraged to convert between simple measurements.</i></p>

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GEOMETRY – PROPS OF SHAPE	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> ▪ draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them ▪ recognise angles as a property of shape or a description of a turn ▪ identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle ▪ identify horizontal and vertical lines and pairs of perpendicular and parallel lines. 	<p>Pupils' knowledge of the properties of shapes is extended at this stage to symmetrical and non-symmetrical polygons and polyhedra. Pupils extend their use of the properties of shapes. They should be able to describe the properties of 2-D and 3-D shapes using accurate language, including lengths of lines and acute and obtuse for angles greater or lesser than a right angle.</p> <p>Pupils connect decimals and rounding to drawing and measuring straight lines in centimetres, in a variety of contexts.</p>	<p><i>Chn should be able to confidently recognise a wide range of 2D shapes, in which they can identify lines of symmetry. They should be able to recognise shapes with no lines of symmetry.</i></p> <p><i>As well as being able to identify right angles, chn should begin to draw them with a good degree of accuracy. It may be appropriate to introduce a protractor at this point.</i></p> <p><i>Chn should be introduced to using pairs of compass and be able to use a compass to draw circles and arcs with a given radius.</i></p>
STATISTICS	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> ▪ interpret and present data using bar charts, pictograms and tables ▪ solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables. 	<p>Pupils understand and use simple scales (for example, 2, 5, 10 units per cm) in pictograms and bar charts with increasing accuracy.</p> <p>They continue to interpret data presented in many contexts.</p>	<p><i>This area of the curriculum is able to draw obvious links with the collection of data in Science and Geography and should be taught as such. Using these meaningful data sets, chn should be able to organise and interpret numerical data in simple lists, tables & graphs (Eg. frequency tables, Venn & Carroll diagrams, bar charts, pictograms where one picture represents two/five/multiples of ten).</i></p>