## Maths planning document

## Teagues Bridge Primary school

 2023 - Year 2| Written on: | $30^{\text {th }}$ March 2020 |
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| Reviewed on: | March 2023 |
| Next review: | March 2024 |
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This document supported by the CLIC maths program providing teaching and consolidation of mental strategies for mathematics and the white rose small steps for teaching sequences. Weeks are a guideline and should be adapted for the needs of the children. Time for consolidation is designed for recapping of previous units to ensure learning in committed to the long-term memory. This can also be used to teach areas of misconceptions.

## Mathematics $\ln$ tent

At Teagues Bridge, our intention is ambitious. We aim to create strong mathematicians who have the necessary skills and understanding to tackle mathematical challenges in varying contexts, including the ability to reason and apply their knowledge to solving problems. This should mean that children are able to apply their knowledge to everyday life and can aspire to achieve anything that they want. We want our pupils to have strong mental manipulation and to use written strategies when appropriate.

Our philosophy for mathematics is replacing an idea that maths is lots of rules and numbers with a study of patterns and connected ideas. In early years they will build a foundation of number understanding and representation through mainly concrete and pictorial representations. The approach will be supported by in depth questioning, throughout the school to develop mastery.
Use of CPA is encouraged to ensure the curriculum is accessible for all children and that they all have the opportunity and are able to demonstrate their understanding in a variety of ways. This will enable them to have a good understanding of maths and not just the ability to follow a procedure. We want to empower them to want to ask questions and want to find the answers.
Aims: The national curriculum for mathematics aims to ensure that all pupils:

- become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can solve problems by applying their mathematics to a variety of routine and nonroutine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.
Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity, organised into apparently distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to science and other subjects.

The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.
Our lessons are structured to enable all children to achieve and have an opportunity to make progress with their learning. Each lesson begins with a CLIC maths activity, where they have chance to develop their mental strategies, secure number facts and number manipulation. They then develop their mathematical fluency with the teacher modelling and explaining before they have a go themselves. Children then have a reasoning/ problem solving activity which is a variation of the previous work to demonstrate they have mastered the objective. Children who are ready can then challenge themselves with a task that requires applying the learning to a greater depth. We have our own programme of study which is supported with schemes like White Rose to support.

|  | Year 2 －Yearly Overview |  |  |  |  | $\stackrel{\text { N }}{8}$ | $\infty$ <br> $\stackrel{\text { ® }}{\boxed{\circ}}$ <br> $\$$ |  |  |  |  |  |
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|  |  | $\begin{aligned} & m \\ & \text { 逽 } \\ & 3 \end{aligned}$ | $\begin{aligned} & \pm \\ & \stackrel{\rightharpoonup}{5} \\ & 3 \end{aligned}$ | $\begin{aligned} & \text { R } \\ & \stackrel{⿺ 𠃊}{⿺ 𠃊} \\ & 3 \end{aligned}$ | $\begin{aligned} & \circ \\ & \stackrel{y}{⿺ 𠃊} \\ & 3 \end{aligned}$ |  |  |  | $\begin{aligned} & \text { 은 } \\ & \stackrel{y y}{*} \\ & 3 \end{aligned}$ | $\begin{array}{l\|l} = & \cong \\ \hdashline \text { हैँ } & \text { §̃ } \\ 3 & 3 \end{array}$ | $\begin{aligned} & \text { m } \\ & \stackrel{y}{\circ} \\ & \stackrel{y}{n} \end{aligned}$ | ＋ |
| \％ | Number and place value <br> Counting，reading and writing numbers | Addition and subtraction Bonds，add／subtract ones and 3 one digit numbers |  |  | Multiplication and division－repeated addition of equal groups |  | Fractions：equal groups，halves and quarters |  |  | Measurement ：Time | Measurem | t：Money |
| $$ | Number and place value ：estimating． counting and comparing | Addition and subtraction adding／subtracting across 10 Adding／subtracting 2 digit numbers |  |  | Multiplication：arrays and groupings |  | Geometry：Shape |  | Fractions： Unit and non unit fractions | Measurement：Length and height | Measure ment time | Mone y－ calcul arans |
| \％ | Number and place value：partitioning and rearranging | Addition and subtraction <br> Mixed add／ subtract． comparing／missing numbers |  | Multiplication and division－Times tables facts and the inverse． |  | Statistics |  | Measurement：Mass， capacity and temperature |  | Fractions：three quarters | Geometry：position and direction |  |

## Year 2: Autumn term

| National curriculum objectives | Prior knowledge from year I | Learning outcomes (including WR steps) | Mathematical aspect | Vocabulary | Manipulatives | Problem solving resources |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - To recognise the place value of each digit in a two-digit number (tens, ones). | Consolidation (Step one) <br> Knows the base ten values of two digit numbers <br> Knows that I ten is ten ones as a base ten value. <br> Knows how the teen numbers are built. | Steps $2-5$ and 7 <br> LO I know to count objects in 10's to make 100. <br> LOI know how to recognise IO's and I's <br> LOI know the value of tens and ones <br> LOI know partitioning numbers to 100 . <br> LO I know partitioning numbers to 100 in different ways. | Maths resources <br> for teachers <br> White Rose <br> Maths <br> Number and place value: counting. reading and writing 2-digit numbers. | tens <br> ones <br> place value grid partition | Place value counters <br> (1) 10 <br> 100 ). 1000 <br> Place value charts $1\|1\| 111$ <br> Base ten equipment <br> Numicon | Counting in steps and recognising the value of each digit. <br> Buzzy Bee * <br> Five Steps to 50 * <br> $\frac{\text { Snail One Hundred }}{*}$ <br> Two-digit Targets * <br> 6 Beads ** |


| - To read and write numbers to at least IOO in numerals and in words. | Know how to count, read and write numbers to 10 in numerals and words | Steps 6 and 8 <br> LO I know to write numbers to 100 in words <br> Lol know to write numbers to IOO in expanded form | Maths resources for teachers White Rose Maths <br> Number and place value: counting. reading and writing <br> 2-digit numbers | units tens | Place value counters (1) 10 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - To identify, represent and estimate numbers using different representations, including the number line | Know to identify and represent numbers using objects and pictorial representations including the number line | Steps 9 and 10 . <br> LO: I know to show IO's on a number line to 100 <br> LO: I know to show any 2 digit number on a number line | Maths resources for teachers White Rose Maths <br> Number and place value: counting. reading and writing <br> 2-digit numbers | units tens number line position estimate | Number lines | Number lines is disguise |
| - To recall and use addition and subtraction facts to 20 fluently and derive and use related facts up to 100 . | Step one consolidation: bonds to 10 . <br> Knows that addition makes a larger total. <br> Knows that | Steps 2-6 <br> Lo I know fact families - addition bonds within 20 | Maths <br> resources for teachers \| White Rose Maths <br> Addition and subtraction | total tens ones subtract difference bar model represent | Place value charts <br> Place value counters | Sitting Round the Party Tables * I <br> Two Spinners * 1 <br> Half Time * <br> Heads and Feet ** <br> Noah ** |


| - To add 3 one digit numbers | subtraction <br> reduces the amount. <br> Knows how to count on to find totals to 20. <br> Knows fact families to IO then 20. | LO I know fact families - subtraction within 20 <br> LO I know how facts to 10 and facts to 100 are related <br> Lo I know bonds to 100 <br> Lol know adding by making IO |  |  | (1) 10 <br> 100 (1,000 <br> Base ten equipment | Eggs in Baskets ** <br> Birthday Cakes ** <br> Getting the <br> Balance ${ }^{* * *}$ I |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - To calculate mathematical statements for multiplication and division within the multiplication tables and write them using multiplication, division and equals signs. | Knows how to count to 100 in $1 \mathrm{~s}, 2 \mathrm{~s}, 1 \mathrm{os}$ and 5 s | Steps I to 5 <br> LO I know recognising equal groups <br> LO I know making equal groups <br> Lo I know adding equal groups <br> Lo I know using the multiplication symbol <br> Lol know writing multiplication sentences | Maths resources <br> for teachers \| <br> White Rose <br> Maths <br> Multiplication and division | equal groups multiplication ( $x$ ) times-table times | Numicon <br> Multilink | Our Numbers * G Ip Dip *I <br> Magic Plant ** |
| - To write simple fractions for example, I/2 of | To know finding halves and quarters. | Steps I to 6 | Maths resources for teachers \| | half (1/2) quarter (1/4) whole | Fraction tiles | Halving ** <br> Happy Halving *** |

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| $6=3$ and recognise the equivalence of two quarters and one half. |  | LO I Know parts and a whole <br> LoI know equal and unequal parts <br> Lol know recognising a half <br> Lol know finding a half <br> Lol know recognising quarters <br> Lo I know finding a quarter | White Rose <br> Maths <br> Fractions: equal groups, halves and quarters | equivalent equal parts numerator denominator fraction bar unit fraction | Cuisenaire rods <br> Fractions circles <br> Numicon |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - To tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times. | Know that time passes in cycles. <br> Knows how to read the time to the 5minute interval. | Steps I to 5 <br> Lo 1 know O'clock and half past <br> Lo I know quarter past and quarter to | Maths resources <br> for teachers \| <br> White Rose <br> Maths <br> Telling the time to the nearest 5 minutes | o'clock half past quarter past quarter to minute hand hour hand duration | Numberlines for counting time | ```Stop the Clock *** G Matching Time * G``` |

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|  |  | Lo I know to tell the time past the hour <br> Lol know to tell the time to the next hour <br> Lo I know to tell the time to the nearest 5 minutes |  |  | Digital display clocks |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - To recognise and use symbols for pounds ( $£$ ) and pence (p); combine amounts to make a particular value <br> - To find different combinations of coins that equal the same amounts of money | Knows how to find totals and equivalent amounts in money using notes and coins. <br> Knows how to find change in the context of money. | Steps I to 5 and 7 <br> Lo I know to count money in pence <br> Lo I know to count money in pounds ( notes and coins <br> Lol know to count money in pounds and pence <br> Lo 1 know how to chose coins and notes to make amounts | Maths resources for teachers I White Rose Maths <br> Money : coins and notes | pounds <br> pence <br> change <br> total <br> notes <br> coins | Coins and notes | Money Bags ** <br> Five Coins ** I <br> The Puzzling <br> Sweet Shop ** |



## Spring term

| National curriculum objectives | Prior knowledge from year I | Learning outcomes (including WR steps) | Mathematical aspect | Vocabulary | Manipulatives | Problem solving resources |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - To compare and order numbers from O up to IOO; use <, > and $=$ signs. | To know the language of equal to, more than, less than (fewer), most, least. | Steps II to I4 <br> LO: I know to estimate numbers on a number line <br> Lo I know comparing objects <br> LOI know how comparing numbers <br> Lol know ordering objects <br> LO I know ordering numbering | Maths resources <br> for teachers <br> White Rose <br> Maths <br> Number and place value: counting. reading and writing <br> 2-digit numbers | tens <br> ones <br> place value grid partition <br> more <br> fewer <br> fewest <br> greatest <br> smallest | Base ten equipment <br> Numicon | Comparing / one more <br> and one less <br> $\frac{\text { Domino }}{\text { Sequences * }}$ <br> Next Domino * <br> $\underline{100 \text { Square Jigsaw }}$ <br> सG That Number <br> Square! * I <br> Domino Number <br> Patterns ** |


| To add and subtract using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a two-digit number and tens; two twodigit numbers; adding three one-digit numbers | Knows how to count on to find totals to 20. <br> Knows that addition 'undoes' subtraction and vice versa | Steps 8 - 18 <br> Lo I know adding to the next IO. <br> LO I know adding across the 10 boundary <br> LO I know subtracting across a 10 boundary <br> LO I know subtracting from a 10 . <br> Lo I know subtracting <br> a I digit number from <br> a 2 digit number <br> Lo I know finding IO more and IO less <br> Lo I know adding and subtracting 10 <br> LOI know adding two digit numbers within a 10 boundary. <br> LO I know adding two digit numbers across a IO boundary | Maths resources <br> for teachers <br> White Rose <br> Maths <br> Addition and <br> subtraction - <br> adding and <br> subtracting one <br> and two digit <br> numbers | total <br> tens <br> ones <br> subtract <br> difference <br> bar model <br> represent | Numicon | Cuisenaire <br> Counting *** $\mathbf{G}$ <br> The Brown Family <br> ${ }^{\star * *}$ G <br> Cuisenaire <br> Environment * G <br> Unit Differences * <br> I <br> Dicey Addition * G <br> Number Balance ** I <br> $\frac{\text { Jumping Squares }}{{ }^{* *} \text { G }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |

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| To calculate mathematical statements for multiplication and division within the multiplication tables and write them using multiplication, division and equals signs. | Knows that doubles are two groups of the same number. Knows that equal groups can be represented as an array. | Lol know making equal groups using grouping <br> Lo I know making equal groups using sharing |  | divide ( $\div$ ) <br> division <br> share <br> group <br> odd <br> even <br> times-table | counters <br> Multilink | Are You Well Balanced? ${ }^{* * *}$ G I <br> Birthday Sharing * <br> Catrina's Cards |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| To recognise, find, name and write fractions $1 / 3,1 / 4$, $2 / 4$ and $3 / 4$. | Knows thirds are three equal parts of a whole. | Steps 7 - 12 <br> Lo I know recognising the a third <br> LO I know finding a third. <br> Lo 1 know how to find the whole <br> Lo 1 know finding unit fractions <br> LO I know finding non-unit fractions | Maths resources for teachers White Rose Maths <br> Fractions: Thirds, unit and non unit | half (1/2) <br> quarter (1/4) <br> whole <br> third (1/3) <br> equivalent <br> equal parts <br> numerator <br> denominator <br> fraction bar <br> non-unit fraction <br> unit fraction | Fraction tiles <br> Cuisenaire rods <br> Fractions circles | Fair Feast * |


|  |  | Lol know finding equivalence between 2 halves and a whole. 2 quarters and a half. |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - To choose and use appropriate standard units to estimate and measure length/height in any direction $(\mathrm{m} / \mathrm{cm})$; mass ( $\mathrm{kg} / \mathrm{g}$ ); <br> temperature $\left({ }^{\circ} \mathrm{C}\right)$; capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels | Knows the standard units of measure for length. <br> Knows the relationships between units of measure for length | Steps I to 5 <br> LO I know to measure the length of objects in CM <br> LO I know to measure in metres <br> LO I know to compare lengths and heights <br> LO I know to order and compare lengths and heights <br> LO I know to calculate lengths and heights using the 4 operations |  | length centimetre ( cm ) metre ( m ) longer shorter metre stick height width compare distance | ruler <br> metre ruler <br> metre wheel. | Order, Order! * I <br> Compare the Cups <br> Making Longer, <br> Making Shorter ** I |
| - To Know the number of minutes in an hour and the number of hours in a day | Knows how to read the time to the 5minute interval. <br> Know the number of hours in a day and the number of minutes in an hour | Step 6 and 7 <br> Lol know the number of minutes in an hour <br> Lol know the number of hours in a day | $\frac{\text { Maths resources }}{\frac{\text { for teachers }}{\text { White Rose }}}$ $\frac{\text { Maths }}{}$ Time: measurement | o'clock half past quarter past quarter to minute hand hour hand duration | Clocks | ```Stop the Clock *** G Matching Time * G``` |


|  |  |  |  | day minute hour am pm |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - To recognise and use symbols for pounds ( $£$ ) and pence (p); combine amounts to make a particular value <br> - To find different combinations of coins that equal the same amounts of money | Knows how to find totals and equivalent amounts in money using notes and coins. <br> Knows how to find change in the context of money. | Money <br> Steps 6,7, 9 and IO <br> Lo I know how to calculate with money <br> Lo I know to find change from different amounts <br> Lo I know to solve 2 step money problems | Maths resources for teachers White Rose Maths <br> Money : coins and notes | pounds <br> pence <br> change <br> total <br> notes <br> coins | Coins and notes | Money Bags ** <br> Five Coins ** I <br> The Puzzling Sweet Shop ** |

## Summer term

| National curriculum objectives | Prior knowledge from year I | Learning outcomes lincluding WR steps) | Mathematical aspect | Vocabulary | Manipulatives | Problem solving resources |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| To count in steps of 2,3 , and 5 from 0 , and count in tens from any number, forward or backward. | To count to IOO in steps of one <br> To count forwards and backwards | Steps 15 and 16. <br> Lol know counting in 2's <br> Lol know counting in 5's <br> Lol know counting in 10's <br> Lol know counting in 3's <br> Lo I know counting backwards. | Maths resources <br> for teachers <br> White Rose <br> Maths <br> Number and place value: <br> Counting in different amounts | tens <br> ones <br> place value grid partition <br> steps <br> forwards <br> backwards <br> zero <br> fives <br> threes | Numicon | Counting in steps and recognising the value of each digit. <br> Buzzy Bee * <br> Five Steps to 50 * <br> Snail One Hundred * G <br> Two-digit Targets * <br> 6 Beads ** |
| Using concrete objects and pictorial representations, including those involving numbers, quantities and measures Applying their increasing knowledge of mental and written methods | Knows the operation required and calculates using counting and known facts, including doubles <br> Knows the effect of zero. | Steps 19-20 <br> Lo - I know adding and subtracting 2 digit numbers <br> Lo - I know calculating with addition and subtraction | Maths resources <br> for teachers <br> White Rose <br> Maths <br> Addition and subtraction | total <br> tens <br> ones <br> add <br> addition <br> subtraction <br> subtract <br> difference bar model <br> represent | Numicon <br> Multilink | Unit Differences * <br> I <br> Dicey Addition * G <br> Number Balance ** <br> I <br> ${ }_{* *}$ Jumping Squares |


|  | Knows doubles to 10 +10 . | LO I know comparing number sentences |  | inverse reverse |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| To recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems. | Knows the operation required and calculates using counting and known facts, including doubles | Step 21 <br> Lo I know using the inverse <br> Lo I know finding missing numbers | Maths resources <br> for teachers <br> White Rose <br> Maths <br> Addition and subtraction | total <br> tens <br> ones <br> add <br> addition <br> subtraction <br> subtract <br> difference <br> bar model <br> represent <br> inverse <br> reverse | Numicon | $\begin{aligned} & \frac{\text { Getting the }}{\text { Balance }^{* * *} \text { I }} \end{aligned}$ |
| To recall and use multiplication and division facts for the $\times 2$ multiplication tables, including recognising odd and even numbers. | Knows the operation required and calculates using counting and known facts, including doubles | Steps 9 to 12 <br> Lol know the 2 times table <br> Lo I know doubling numbers <br> Lo I know halving numbers | Multiplication and division | equal groups <br> multiplication ( $x$ ) <br> times-table <br> times <br> divide ( $\div$ ) <br> division <br> share <br> group <br> odd <br> even <br> times-table | Numicon <br> Multilink | Are You Well Balanced? *** G I <br> Birthday Sharing * <br> Catrina's Cards * |

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|  |  | Lo 1 know doubling and halving numbers <br> Lol know odd and even numbers |  | double halve |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| To recall and use multiplication and division facts for the 2,5 and 10 multiplication tables, | Knows how to count to 100 in $1 \mathrm{~s}, 2 \mathrm{~s}, 1 \mathrm{Os}$ and 5 s. | Steps 13 to 16. <br> LO - I know the 10 times table <br> LO - I know dividing by 10 <br> LO - I know the 5 times table <br> LO - I know dividing by 5 | Multiplication and division | equal groups <br> multiplication ( $x$ ) <br> times-table <br> times <br> divide ( $\div$ ) <br> division <br> share <br> group <br> odd <br> even <br> times-table <br> double <br> halve |  | Our Numbers * G <br> Ip Dip *I <br> Magic Plant ** <br> The Amazing Splitting Plant *** <br> The Tomato and the Bean *** <br> Lots of Lollies *** I <br> Growing Garlic *** <br> Are You Well Balanced? ${ }^{* * *}$ G I <br> Birthday Sharing * <br> Catrina's Cards * |
| - To recognise, find, name and write fractions $1 / 3,1 / 4$, | Knows how to calculate halves and quarters in the context of length. mass and capacity. | Steps 13 to 15 <br> LO I know recognising three quarters. <br> LO I know finding three quarters | Fractions | half (1/2) quarter (1/4) whole third (1/3) equivalent equal parts numerator |  | Fair Feast |


| $\begin{aligned} & 2 / 4 \text { and } \\ & 3 / 4 \text {. } \end{aligned}$ | Knows thirds are three equal parts of a whole <br> Knows thirds are three equal parts of a whole | LO I know counting in different fractions up to $a$ whole. |  | denominator fraction bar non-unit fraction unit fraction | Cuisenaire rods <br> Fractions circles <br> Numicon |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and | Knows how to describe position and movement using the correct terms. <br> Knows symmetry is reflection in a vertical line. <br> Knows how to describe position and movement using clockwise, anti-clockwise, left and right. Knows how to sort and match shapes. <br> Knows how to describe position | Step I-6 <br> LOI know how use the language of position <br> LOI know how to describe movement <br> LO I know how to describe turns <br> Lo 1 know how to describe movement and turns <br> Lo l know how to describe turns in patterns | Maths resources for teachers \| White Rose Maths <br> Geometry: position and direction | clockwise anticlockwise <br> forwards <br> backwards <br> left <br> right <br> middle <br> turn <br> half turn <br> quarter turn <br> three-quarter turn | Turns <br> Compass points | Turning Man *I <br> Walking Round a Triangle * <br> Cover the Camel * <br> Triangle Animals ** <br> En-counters |



