Maths planning document

Teagues Bridge Primary school

– Year 2

This document supported by the Numbersense 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 Intent

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.

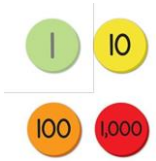
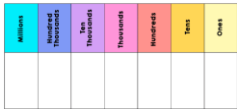
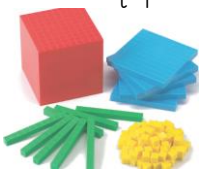
The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly 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.

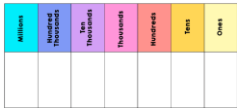
Our lessons are structured to enable all children to achieve and have an **opportunity** to make progress with their learning. Each lesson begins with a **CLIC maths** activity, where they have chance to develop their mental strategies, secure number facts and number manipulation. They then **develop** 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.

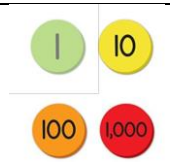
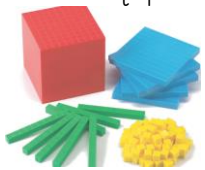
Year 2 – Yearly Overview

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14
Autumn	Number and place value 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		Measurement: Money	
Spring	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		Measurement: time	Money – calculating
Summer	Number and place value: partitioning and rearranging		Addition and subtraction 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	

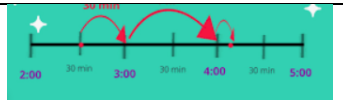
Year 2: Autumn term

National curriculum objectives	Prior knowledge from year 1	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)** Knows the base ten values of two digit numbers Knows that 1 ten is ten ones as a base ten value. Knows how the teen numbers are built.	**Steps 2 – 5 and 7** LO I know to count objects in 10's to make 100. LO I know how to recognise 10's and 1's LO I know the value of tens and ones LO I know partitioning numbers to 100. LO I know partitioning numbers to 100 in different ways.	Maths resources for teachers | White Rose Maths **Number and place value: counting, reading and writing 2-digit numbers.**	tens ones place value grid partition	Place value counters  Place value charts  Base ten equipment  Numicon 	**Counting in steps and recognising the value of each digit.** **Buzzy Bee** * **Five Steps to 50** * I **Snail One Hundred** * G **Two-digit Targets** * **6 Beads** **

• To read and write numbers to at least 100 in numerals and in words.	Know how to count, read and write numbers to 10 in numerals and words	**Steps 6 and 8** LO I know to write numbers to 100 in words Lo I know to write numbers to 100 in expanded form	Maths resources for teachers | White Rose Maths **Number and place value: counting, reading and writing 2-digit numbers**	units tens	Place value counters 	
• 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.** LO: I know to show 10's on a number line to 100 LO: I know to show any 2 digit number on a number line	Maths resources for teachers | White Rose Maths **Number and place value: counting, reading and writing 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. Knows that addition makes a larger total. Knows that	**Steps 2- 6** Lo I know fact families – addition bonds within 20	Maths resources for teachers | White Rose Maths **Addition and subtraction**	total tens ones subtract difference bar model represent	Place value charts  Place value counters	**Sitting Round the Party Tables * I** **Two Spinners * I** **Half Time *** **Heads and Feet **** **Noah ****

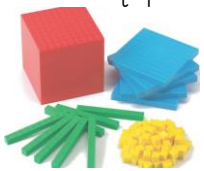
• To add 3 one digit numbers	subtraction reduces the amount. Knows how to count on to find totals to 20. Knows fact families to 10 then 20.	LO I know fact families – subtraction within 20 LO I know how facts to 10 and facts to 100 are related Lo I know bonds to 100 Lo I know adding by making 10			 Base ten equipment 	**Eggs in Baskets** ** **Birthday Cakes** ** **Getting the 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 1s, 2s, 10s and 5s	**Steps 1 to 5** LO I know recognising equal groups LO I know making equal groups Lo I know adding equal groups Lo I know using the multiplication symbol Lo I know writing multiplication sentences	Maths resources for teachers | White Rose Maths Multiplication and division	equal groups multiplication (×) times-table times	Numicon  Multilink 	**Our Numbers** * G **Ip Dip** * I **Magic Plant** **
• To write simple fractions for example, 1/2 of	To know finding halves and quarters.	**Steps 1 to 6**	Maths resources for teachers |	half (1/2) quarter (1/4) whole	Fraction tiles	**Halving** ** I **Happy Halving** ***

6 = 3 and recognise the equivalence of two quarters and one half.		LO I Know parts and a whole Lo I know equal and unequal parts Lo I know recognising a half Lo I know finding a half Lo I know recognising quarters Lo I know finding a quarter	White Rose Maths Fractions: equal groups, halves and quarters	equivalent equal parts numerator denominator fraction bar unit fraction	 Cuisenaire rods  Fractions circles  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. Knows how to read the time to the 5-minute interval.	Steps I to 5 Lo I know O'clock and half past Lo I know quarter past and quarter to	Maths resources for teachers | White Rose Maths Telling the time to the nearest 5 minutes	o'clock half past quarter past quarter to minute hand hour hand duration	Clocks  Numberlines for counting time	Stop the Clock *** G Matching Time * G

		Lo I know to tell the time past the hour Lo I know to tell the time to the next hour 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 • 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. Knows how to find change in the context of money.	**Steps I to 5 and 7** Lo I know to count money in pence Lo I know to count money in pounds (notes and coins Lo I know to count money in pounds and pence Lo I know how to chose coins and notes to make amounts	Maths resources for teachers | White Rose Maths Money : coins and notes	pounds pence change total notes coins	Coins and notes 	**Money Bags** ** **Five Coins** ** I **The Puzzling Sweet Shop** **

		Lo I know different combinations can total the same amount Lo I know to compare different amounts of money Lo I know how to calculate with money Lo I know to make a pound Lo I know to find change from different amounts Lo I know to solve 2 step money problems				

Spring term

National curriculum objectives	Prior knowledge from year 1	Learning outcomes (including WR steps)	Mathematical aspect	Vocabulary	Manipulatives	Problem solving resources
• To compare and order numbers from 0 up to 100; use <, > and = signs.	To know the language of equal to, more than, less than (fewer), most, least.	Steps 11 to 14 LO: I know to estimate numbers on a number line Lo I know comparing objects LO I know how comparing numbers Lo I know ordering objects LO I know ordering numbering	Maths resources for teachers | White Rose Maths Number and place value: counting, reading and writing 2-digit numbers	tens ones place value grid partition more fewer fewest greatest smallest	Base ten equipment  Numicon 	Comparing / one more and one less **Domino Sequences** * **Next Domino** * **100 Square Jigsaw** * G **That Number Square!** * I **Domino Number 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 two-digit numbers; adding three one-digit numbers	Knows how to count on to find totals to 20. Knows that addition 'undoes' subtraction and vice versa	**Steps 8 – 18** Lo I know adding to the next 10. LO I know adding across the 10 boundary LO I know subtracting across a 10 boundary LO I know subtracting from a 10. Lo I know subtracting a 1 digit number from a 2 digit number Lo I know finding 10 more and 10 less Lo I know adding and subtracting 10 LO I know adding two digit numbers within a 10 boundary. LO I know adding two digit numbers across a 10 boundary	Maths resources for teachers | White Rose Maths **Addition and subtraction – adding and subtracting one and two digit numbers**	total tens ones subtract difference bar model represent	Numicon  Multilink 	**Cuisenaire Counting** *** G **The Brown Family** *** G **Cuisenaire Environment** * G **Unit Differences** * I **Dicey Addition** * G **Number Balance** ** I **Jumping Squares** ** G

		LO I know subtracting two digit numbers within a 10 boundary LO I know subtracting two digit numbers across a 10 boundary.				
To show that multiplication of two numbers can be done in any order (commutative) and division for one number by another cannot.	Knows how to count to 100 in 1s, 2s, 10s and 5s. Knows that doubles are two groups of the same number. Knows that equal groups can be represented as an array.	**Steps 6 to 8** LO I know using arrays to represent multiplication LO I know using arrays to represent division	Maths resources for teachers | White Rose Maths Multiplication and division	equal groups multiplication (×) times-table times divide (÷) division share group odd even times-table	counters  Multilink 	**The Tomato and the Bean** *** **Lots of Lollies** *** I **Growing Garlic** ***

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.	Lo I know making equal groups using grouping Lo I know making equal groups using sharing	Maths resources for teachers | White Rose Maths Multiplication and division	divide (÷) division share group odd even times-table	counters  Multilink 	**Are You Well Balanced?** *** **G I** **Birthday Sharing** * **Catrina's Cards**
To recognise, find, name and write fractions I/3, I/4, 2/4 and 3/4.	Knows thirds are three equal parts of a whole.	**Steps 7 – 12** Lo I know recognising the a third LO I know finding a third. Lo I know how to find the whole Lo I know finding unit fractions LO I know finding non-unit fractions	Maths resources for teachers | White Rose Maths Fractions : Thirds, unit and non unit	half (I/2) quarter (I/4) whole third (I/3) equivalent equal parts numerator denominator fraction bar non-unit fraction unit fraction	Fraction tiles  Cuisenaire rods  Fractions circles 	**Fair Feast** *

		Lo I 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 (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels	Knows the standard units of measure for length. Knows the relationships between units of measure for length	**Steps I to 5** LO I know to measure the length of objects in CM LO I know to measure in metres LO I know to compare lengths and heights LO I know to order and compare lengths and heights LO I know to calculate lengths and heights using the 4 operations	Maths resources for teachers | White Rose Maths Lengths and heights	length centimetre (cm) metre (m) longer shorter metre stick height width compare distance	ruler  metre ruler  metre wheel. 	**Order, Order!** * I **Compare the Cups** * **Making Longer, 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 5-minute interval. Know the number of hours in a day and the number of minutes in an hour	**Step 6 and 7** Lo I know the number of minutes in an hour Lo I know the number of hours in a day	Maths resources for teachers | White Rose Maths Time : measurement	o'clock half past quarter past quarter to minute hand hour hand duration	Clocks	**Stop the Clock** *** G **Matching Time** * G

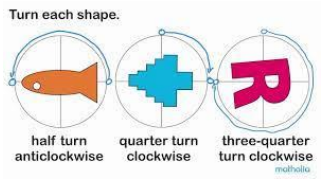
				day minute hour am pm		
• To recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value • To find different combinations of coins that equal the same amounts of money	Knows how to find totals and equivalent amounts in money using notes and coins. Knows how to find change in the context of money.	Money Steps 6,7 , 9 and 10 Lo I know how to calculate with money Lo I know to find change from different amounts Lo I know to solve 2 step money problems	Maths resources for teachers | White Rose Maths Money : coins and notes	pounds pence change total notes coins	Coins and notes 	**Money Bags** ** **Five Coins** ** I **The Puzzling Sweet Shop** **

Summer term

National curriculum objectives	Prior knowledge from year 1	Learning outcomes (including 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 100 in steps of one To count forwards and backwards	Steps 15 and 16. Lo 1 know counting in 2's Lo 1 know counting in 5's Lo 1 know counting in 10's Lo 1 know counting in 3's Lo 1 know counting backwards.	Maths resources for teachers | White Rose Maths Number and place value : Counting in different amounts	tens ones place value grid partition steps forwards backwards zero fives threes	Numicon 	**Counting in steps and recognising the value of each digit.** **Buzzy Bee** * **Five Steps to 50** * I **Snail One Hundred** * G **Two-digit Targets** * **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 Knows the effect of zero.	Steps 19 -20 Lo – 1 know adding and subtracting 2 digit numbers Lo – 1 know calculating with addition and subtraction	Maths resources for teachers | White Rose Maths Addition and subtraction	total tens ones add addition subtraction subtract difference bar model represent	Numicon  Multilink	**Unit Differences** * I **Dicey Addition** * G **Number Balance** ** I **Jumping Squares** ** G

	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 Lo I know using the inverse Lo I know finding missing numbers	Maths resources for teachers | White Rose Maths **Addition and subtraction**	total tens ones add addition subtraction subtract difference bar model represent inverse reverse	Numicon  Multilink 	**Getting the Balance** *** I
To recall and use multiplication and division facts for the x2 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 Lo I know the 2 times table Lo I know doubling numbers Lo I know halving numbers	**Multiplication and division**	equal groups multiplication (×) times-table times divide (÷) division share group odd even times-table	Numicon  Multilink 	**Are You Well Balanced?** *** G I **Birthday Sharing** * **Catrina's Cards** *

		Lo I know doubling and halving numbers Lo I 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 1s, 2s, 10s and 5s.	Steps 13 to 16. LO - I know the 10 times table LO - I know dividing by 10 LO - I know the 5 times table LO - I know dividing by 5	Multiplication and division	equal groups multiplication (×) times-table times divide (÷) division share group odd even times-table double halve	Numicon  Multilink 	**Our Numbers** * G **Ip Dip** * I **Magic Plant** ** **The Amazing Splitting Plant** *** **The Tomato and the Bean** *** **Lots of Lollies** *** I **Growing Garlic** *** **Are You Well Balanced?** *** G I **Birthday Sharing** * **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 LO I know recognising three quarters. LO I know finding three quarters	Fractions	half (1/2) quarter (1/4) whole third (1/3) equivalent equal parts numerator	Fraction tiles 	**Fair Feast**

2/4 and 3/4.	Knows thirds are three equal parts of a whole 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  Fractions circles  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. Knows symmetry is reflection in a vertical line. Knows how to describe position and movement using clockwise, anti-clockwise, left and right. Knows how to sort and match shapes. Knows how to describe position	Step I – 6 LO I know how use the language of position LO I know how to describe movement LO I know how to describe turns Lo I know how to describe movement and turns Lo I know how to describe turns in patterns	Maths resources for teachers | White Rose Maths **Geometry: position and direction**	clockwise anticlockwise forwards backwards left right middle turn half turn quarter turn three-quarter turn	Turns  Compass points 	**Turning Man** * I **Walking Round a Triangle** * **Cover the Camel** * **Triangle Animals** ** **En-counters**

three-quarter turns (clockwise and anticlockwise)	and movement using right angles for quarter turns.	Lo I know symmetry is a reflection in a vertical line.				