Billingshurst Primary School

Long Term Maths Plan

Year: 1

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
AUTUMN 1	**Previous Reception experiences and counting within 100** RtP: • 1NPV-1 Page 18 Prior Learning • Begin to develop a sense of the number system by verbally counting forward to and beyond 20, pausing at each multiple of 10. • statutory framework for the early years foundation stage DfE publication (pages13-14 are specific to maths). • DfE Development Matters Guidance 2020 (pages 85-98 are specific to maths). SPINES: 1.9 Composition of numbers: 20-100 (Teaching point 1 – 3 ONLY) Small Steps (mix of Development Matters Guidance and Y1 White Rose Block 1): 1.Count objects, actions and sounds (including 0 and sorting to be able to count) 2. Subitise. 3. Link the number symbol (numeral) with its cardinal number value. 4. Count forwards (up to 10) 5.Count backwards (from 10) 6.Understand the 'one more than/one less than' relationship between consecutive numbers. 7. Compare numbers (equal to, more, less, greater than, fewer, less than) 8.Order objects and numbers (smallest to greatest, greatest to smallest) 9. Explore the composition of numbers to 10. 10. Automatically recall number bonds for numbers 0–5 and some to 10. 11. Count beyond ten. 12. Counting forward to and beyond 20, pausing at each multiple of 10. Using bundles of straw to group together tens. 13.Count with the support of visual representations and gestural patterns, for example pupils can point to numerals on a 100 square or number line, or tap out the numbers on a Gattegno chart. Include dual counting: 'seven, eight, nine, ten, eleven, twelve… ' 'seven, eight, nine, ten, one-tens-one, one-tens-two…' 14.Starting the counting sequence with numbers other than 1 or 100 15.Recite number names, without the support of visual representations, to allow pupils to focus on and develop fluency in the verbal patterns NC: Count to and across 100, forwards and backwards, beginning with 0 or 1 or from any given number. Count, read and write numbers to 100 in numerals. Given a number, identify one more and one less. Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least. **ELG: Number** Children at the expected level of development will: - Have a deep understanding of number to 10, including the composition of each number; **ELG: Numerical Patterns** Children at the expected level of development will: -Verbally count beyond 20, recognising the pattern of the counting system; -Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity; - Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.				**Comparison of quantities and part-whole relationships** RtP: • 1NPV-1 Page 18 • 1NPV-2 Page 20 Prior Learning RtP: • Begin to develop a sense of the number system by verbally counting forward to and beyond 20, pausing at each multiple of 10. • Play games that involve moving along a numbered track, and understand that larger numbers are further along the track. SPINES: 1.1 Comparison of quantities and measures 1.2 Introducing 'whole' and 'parts': part-part-whole Small Steps: 1 Pupils explain that items can be compared using length and height 2 Pupils explain that items can be compared using weight/mass and volume/capacity 3 Pupils count a set of objects (strategies for this) 4 Pupils compare sets of objects 5 Pupils use equality and inequality symbols to compare sets of objects 6 Pupils use equality and inequality symbols to compare expressions 7 Pupils explain what a whole is 8 Pupils explain that a whole can be split into parts 9 Pupils explain that a whole can represent a group of objects 10 Pupils identify a part of a whole group 11 Pupils explain what a part-whole model is 12 Pupils use a part-whole model to represent a whole partitioned into two parts 13 Pupils use a part-whole model to represent a whole partitioned into more than two parts NC: Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least. Y2: Use <, > and = signs. Compare, describe and solve practical problems for lengths and heights: long/short, longer/shorter, tall/short, double/half. Compare, describe and solve practical problems for mass/weight: heavy/light, heavier than, lighter than. Compare, describe and solve practical problems for capacity and volume: full/empty, more than/less than, half full, quarter full, quarter.		

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AUTUMN 2	**Numbers 0 – 5** RtP: • 1NPV-2 Page 20 • 1AS-1 Page 30 Prior Learning RtP: Play games that involve moving along a numbered track, and understand that larger numbers are further along the track. Understand the cardinal value of number words, for example understanding that 'four' relates to 4 objects. Subitise for up to to 5 items. Automatically show a given number using fingers. SPINES: 1.3 Composition of numbers: 0–5 Small Steps: 1 Pupils explain that numbers can represent how many objects there are in a set 2 Pupils explain that ordinal numbers show a position and not a set of objects 3 Pupils partition numbers one to five in different ways 4 Pupils partition the numbers one to five in a systematic way 5 Pupils find a missing part when one part and the whole is known 6 Pupils show one more and one less than a number using representations. Pupils describe this accurately. 7 Pupils show one more and one less than a number using representations. Pupils describe this accurately. (Numicon pattern) 8 Pupils use a bar model to represent a whole partitioned into two parts NC: Read and write numbers from 1 to 20 in numerals and words Discuss and solve problems in familiar practical contexts, including using quantities (non-statutory).		**Recognise, compose, decompose and manipulate 2D and 3D shapes** RtP: • 1G-1 Page 42 • 1G-2 Page 44 Prior Learning: DfE Development Matters Guidance 2020 • Select, rotate and manipulate shapes to develop spatial reasoning skills. • Compose and decompose shapes so that children recognise a shape can have other shapes *within* it, just as numbers can. • Continue, copy and create repeating patterns. Also look at Early Childhood Maths Group: Spatial reasoning trajectory: https://earlymaths.org/wp-content/uploads/2021/06/ECMG-Spatial-Reasoning-TRAJECTORY-new.pdf Small Steps: 1 Pupils compose pattern block images 2 Pupils copy, extend and develop repeating and radiating pattern block patterns 3 Pupils compose tangram images 4 Pupils investigate tetromino and pentomino arrangements 5 Pupils investigate ways that four cubes can be composed into different 3D models 6 Pupils explore, discuss and compare 3D shapes 7 Pupils identify 2D shapes within 3D shapes 8 Pupils explore, discuss and compare 2D shapes 9 Pupils explore, discuss and identify circles and shapes that are not circles from shape cut-outs 10 Pupils explore, discuss and identify triangles and shapes that are not triangles from shape cut-outs 11 Pupils explore, discuss and identify rectangles (including squares) from shape cut-outs NC: Recognise and create repeating patterns with objects and with shapes (non-statutory). Recognise and name common 2D shapes (rectangles – including squares, circles and triangles). Recognise and name common 3D shapes (cuboids – including cubes, pyramids and spheres).		**Numbers 0 – 10** RtP: • 1NPV-2 Page 20 • 1AS-1 Page 30 Prior Learning RtP: This unit builds directly on Year 1, Unit 3: Numbers 0 to 5. SPINES: 1.4 Composition of numbers: 6 to 10 Small Steps: 1 Pupils count a set of objects and match the spoken number to the written numeral and number name 2 Pupils represent the numbers 6 to 10 using a five and a bit structure 3 Pupils identify the whole and parts of the numbers 6 to 10 using the five and a bit structure 4 Pupils explore the numbers 6 to 10 using the part whole model and the five and a bit structure 5 Pupils explain where 6, 7, 8 and 9 lie on a number line 6 Pupils explain what odd and even numbers are and the difference between them 7 Pupils explain how even and odd numbers can be partitioned 8 Pupils partition numbers 6 to 10 in different ways 9 Pupils partition the numbers 6 to 10 in a systematic way 10 Pupils identify a missing part when a whole is partitioned into two parts NC: Read and write numbers from 1 to 20 in numerals and words Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.	

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SPRING 1	**Additive structures** RtP: • 1AS-2 Page 36 Prior Learning RtP: Devise and record number stories, using pictures, numbers and symbols (such as arrows). SPINES: 1.5 Additive structures: introduction to aggregation and partitioning 1.6 Additive structures: introduction to augmentation and reduction Small Steps: 1 Pupils combine two or more parts to make a whole 2 Pupils explain that addends can be represented in any order. This is called the commutative law 3 Pupils explain that the = sign can be used to show that the whole and the sum of the parts are equal (1) 4 Pupils explain that the = sign can be used to show that the whole and the sum of the parts are equal (2) 5 Pupils add parts to find the value of the whole and write the equation 6 Pupils find the missing addend in an equation 7 Pupils explain how even and odd numbers can be partitioned 8 Pupils make addition and subtraction stories and write equations to match 9 Pupils represent 'first, then, now' stories with addition equations (1) 10 Pupils represent 'first, then, now' stories with addition equations (2) 11 Pupils represent 'first, then, now' stories with subtraction equations (1) 12 Pupils represent 'first, then, now' stories with subtraction equations (2) 13 Pupils represent different types of stories with subtraction calculations 14 Pupils make addition and subtraction stories, writing equations to match 15 Pupils work out the missing part of an addition story and equation if the other two parts are known 16 Pupils work out the missing part of a subtraction story and equation if the other two parts are known 17 Pupils explain that addition and subtraction are inverse operations (1) 18 Pupils explain that addition and subtraction are inverse operations (2) 19 Pupils use additive structures to think about addition and subtraction equations in different ways NC: Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs. Represent and use number bonds and related subtraction facts within 20. Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = – 9.				**Addition and subtraction facts within 10, (doubling)** RtP: • 1NF-1 Page 24 Prior Learning RtP: Begin to experience partitioning and combining numbers within 10. SPINES: 1.7 Addition and subtraction: strategies within 10 Small Steps: 1 Pupils explain that addition is commutative 2 Pupils find pairs of numbers to 10 (1) 3 Pupils find pairs of numbers to 10 (2) 4 Pupils add and subtract 1 from any number 5 Pupils explain what the difference is between consecutive numbers 6 Pupils explain what happens when 2 is added to or subtracted from odd and even numbers 7 Pupils explain what the difference is between consecutive odd and even numbers 8 Pupils explain what happens when zero is added to or subtracted from a number 9 Pupils explain what happens when a number is added to or subtracted from itself 10 Pupils double numbers and explain what doubling means 11 Pupils halve numbers and explain what halving means 12 Pupils use knowledge of doubles and halves to calculate near doubles and halves 13 Pupils represent different types of stories with subtraction calculations 14 Pupils use knowledge and strategies to add 5 and 3 and 6 and 3 NC: Represent and use number bonds and related subtraction facts within 20. Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = – 9. Through grouping and sharing small quantities, pupils begin to understand: doubling numbers and quantities (non-statutory).	

SPRING 2

Numbers to 20 and Measures (lengths and heights)

RtP:

- 1NPV-2 Page 20

Prior Learning RtP:

This unit builds directly on Year 1, Unit 5: Numbers 0 to 10.

SPINES:

1:10 Composition of numbers: 11-19

Small Steps:

1 Pupils explain that the digits in the numbers 11 to 19 express quantity
2 Pupils explain that the digits in the numbers 11 to 19 express position on a number line
3 Pupils identify the quantity shown in a representation of numbers 11 to 19
4 Pupils use knowledge of '10 and a bit' to solve problems
5 Pupils use knowledge of '10 and a bit' to solve problems
6 Pupils explore odd and even numbers within 20
7 Pupils double the numbers 6 to 9 and halve the result, explaining what doubling and halving is
8 Pupils use knowledge of addition facts within 10 to add within 20
9 Pupils use knowledge of subtraction facts within 10 to subtract within 20
10 Pupils use knowledge of addition and subtraction facts within 10 to add and subtract within 20
11 Pupils measure one object with different non-standard measures and record outcomes
12 Pupils measure items using individual cm cubes (Dienes)
13 Pupils measure length from zero cm using a ruler
14 Pupils estimate length in cm
15 Pupils estimate length, measure length and record these values in a table

NC:

Add and subtract one-digit and two-digit numbers to 20, including zero.
Represent and use number bonds and related subtraction facts within 20.
Through grouping and sharing small quantities, pupils begin to understand: ~~multiplication and division;~~ doubling numbers and quantities; ~~and finding simple fractions of objects, numbers and quantities~~ (non-statutory).
Compare, describe and solve practical problems for lengths and heights: long/short, longer/shorter, tall/short, double/half.

Unitising and coin recognition (multiples of 2's, 5's, 10's)

RtP:

- 1NF-2 Page 26

Prior Learning RtP:

Distribute items fairly, for example, put 3 marbles in each bag.
Recognise when items are distributed unfairly.

SPINES:

2.1 Counting, unitising and coins

Small Steps:

1 Pupils count efficiently in groups of two
2 Pupils count efficiently in groups of ten
3 Pupils count efficiently in group of five
4 Pupils count efficiently by counting in groups of two, five and ten
5 Pupils explain the value of a 1p coin in pence
6 Pupils recognise and explain the value of 2p, 5p and 10p coins
7 Pupils explain that a single coin can be worth several pennies
8 Pupils use knowledge of the value of coins to solve problems
9 Pupils calculate the total value of the coins in a set of 2p coins
10 Pupils calculate the total value of the coins in a set of 5p coins
11 Pupils calculate the total value of the coins in a set of 10p coins
12 Pupils compare sets of 2p, 5p and 10p coins
13 Pupils relate what they have learnt to a real-life context
14 Pupils work out how many coins are needed to make a value of 10p
15 Pupils work out how many coins are needed to make a total value of 20p
16 Pupils use knowledge of the value of coins to solve problems
17 Recognise notes (Extra White Rose)

NC:

Count in multiples of twos, fives and tens.
Recognise and know the value of different denominations of coins and notes.
Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher

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SUMMER TERM 1	**Unitising and coin recognition (multiples of 2's, 5's, 10's)** continued (see previous row)		**Multiplication and Division** RtP: • 1NF-2 Page 26 Prior Learning RtP: Distribute items fairly, for example, put 3 marbles in each bag. Recognise when items are distributed unfairly. SPINES: 2.1 Counting, unitising and coins Small Steps (taken from White Rose) 1.Make equal groups 2. Add equal groups 3. Make arrays 4. Make doubles 5. Grouping to make equal groups 6. Sharing to make equal groups NC: Note: Children do not need to use formal multiplication and division sentences and symbols. The focus should be on using concrete objects, pictorial representations and arrays to begin to understand multiplication and division conceptually, as: doubling and halving numbers and quantities; making connections between arrays, number patterns, and counting in twos, fives. Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher. They make connections between arrays, number patterns, and counting in twos, fives and tens (non-statutory). Through grouping and sharing small quantities, pupils begin to understand: multiplication and division; doubling numbers and quantities; and finding simple fractions of objects, numbers and quantities (non-statutory).		**Place Value within 100** RtP: • 1NPV-1 Page 18 Prior Learning RtP: 1.9 Composition of numbers: 20-100 (Teaching point 1 – 3) SPINES: 1.9 Composition of numbers: 20-100 (Teaching point 4 – 6 ONLY) Small Steps (a combination of White Rose Place Value within 100 and NCETM SPINE 1.9): 1.Counting to 100 and beyond, forwards and backwards, starting with any number 2. Objects can be counted efficiently by making groups of ten. The digits in the numbers 20 – 99 tell us about their value. Prioritise unitising: e.g. using one Dienes stick instead of 10 straws. (Teaching Point 2 recap) 3. Each number on the 0 – 100 number line has a unique position. Identifying previous and next multiples of 10. (Teaching Point 3) 2. The relative size of two two-digit numbers can be determined by first examining the tens digit, then by examining the ones digits if necessary, with reference to the cardinal or ordinal value of the numbers. (Teaching Point 4) 3. Comparing two-digit numbers. 4. Ordering two-digit numbers 5. Finding one-more and one-less (two-digit numbers) 6. Each two-digit number can be partitioned into a tens part and a ones part. (Teaching Point 5) 7. The tens and ones structure of a two digit number can be used to support additive calculation (Teaching Point 6). NC: Count to and across 100, forwards and backwards, beginning with 0 or 1 or from any given number. Count, read and write numbers to 100 in numerals. Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least. Add and subtract one-digit and two-digit numbers to 20, including zero.	

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SUMMER 2	**Fractions** SPINES: 3.0 Guidance on the teaching of fractions in Key Stage 1 Small Steps (taken from NCETM Fractions guidance, White Rose and Maths No Problem) 1 Pupils identify whether something has or has not been split into equal parts 2 Pupils name the fraction 'one-half' in relation to a fraction of a length, shape or set of objects 3 Making halves (White Rose/Maths No Problem) 3 Pupils name the fraction 'one-quarter' in relation to a fraction of a length, shape or set of objects 4 Making quarters (White Rose/Maths No Problem) 5 Sharing and Grouping (Maths No Problem) NC: Note: Children do not need to use fraction notation as this will appear in Y2. They need to be familiar with the concept and language associated with halves and quarters as shapes, objects and quantities. Recognise, find and name a half as one of two equal parts of an object, shape or quantity. Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity. Through grouping and sharing small quantities, pupils begin to understand: multiplication and division; doubling numbers and quantities; and finding simple fractions of objects, numbers and quantities (non-statutory). Pupils are taught half and quarter as 'fractions of' discrete and continuous quantities by solving problems using shapes, objects and quantities (non-statutory). Pupils connect halves and quarters to the equal sharing and grouping of sets of objects and to measures, as well as recognising and combining halves and quarters as parts of a whole (non-statutory).		**Position and direction** No specific NCETM Spine/RtP Resources for this Unit. Ensure NCETM guidance is read: https://www.ncetm.org.uk/classroom-resources/cp-year-1-unit-10-position-and-direction-2-1-1/ Small Steps: 1. Describe turns 2. Describe position (left, right, forwards, backwards) 3. Describe position (top, in between, bottom, above, below) NC: Describe position, direction and movement, including whole, half, quarter and three-quarter turns. Use the language of position, direction and motion, including: left and right, top, middle and bottom, on top of, in front of, above, between, around, near, close and far, up and down, forwards and backwards, inside and outside. (non-statutory).		**Time** No specific NCETM Spine/RtP Resources for this Unit. Ensure NCETM guidance is read: https://www.ncetm.org.uk/classroom-resources/cp-year-1-unit-11-time/ Small Steps: 1. Before and after 2. Dates 3. Time to the hour 4. Time to the half hour 5. Writing time 6. Comparing time NC: Compare, describe and solve practical problems for time: hours, minutes, seconds, quicker, slower, earlier, later. Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]. Recognise and use language relating to dates, including days of the week, weeks, months and years. Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.		**Weight and Mass** No specific NCETM Spine/RtP Resources for this Unit. Concept introduced in comparison of quantities and part—whole relationships. Small Steps (taken from White Rose) 1. Introduce weight and mass 2. Measure mass 3. Compare mass 4. Introduce capacity and volume 5. Measure capacity 6. Compare capacity NC: Compare, describe and solve practical problems for mass/weight: heavy/light, heavier than, lighter than. Compare, describe and solve practical problems for capacity and volume: full/empty, more than/less than, half full, quarter full, quarter.

Cross Curricular opportunities:

Position and Direction:

- PE - provides opportunities to experience, feel and understand positional language and whole and half rotation in a range of contexts such as dance, team sports and games.
- English - while speaking and listening and in general classroom routines such as "please can you put your reading book inside the cupboard which is halfway down the corridor?", take the opportunity to reinforce the language of position and direction whenever you can. This could include ordering parts of a story or drawing a story map. You could read stories featuring positional and directional language such as 'Rosie's Walk' by Pat Hutchins or 'We're Going on A Bear Hunt' by Michael Rosen. Draw attention to positional and directional language with the children.
- Art and Design - study examples of art with different perspectives, pattern and rotation such as tessellations.
- ICT - while using a programmable toy, coding and programming, pupils will have the opportunity to use and reinforce the language. You may want to look at electronic maps or tools such as Google Earth to think about proportional relationships between points.
- Geography - using directional language to describe locations or routes on simple maps or plans will present the chance to use and understand these words accurately.

Time:

- History – children should develop an awareness of the past, using common words and phrases relating to the passing of time.
- Throughout the school day referring to when events occur such as the start and end of the school day, lunchtime, etc.