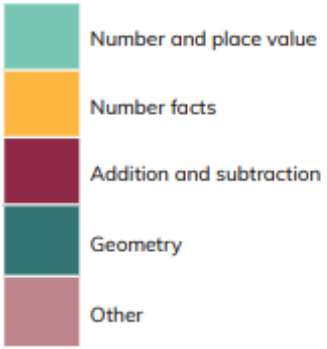
	Unit	Unit name
Autumn 1	1	Previous Reception experiences and counting within 100
Autumn 2	2	Comparison of quantities and part–whole relationships
	3	Numbers 0 to 5
Spring 1	4	Recognise, compose, decompose and manipulate 2D and 3D shapes
	5	Numbers 0 to 10
Spring 2	6	Additive structures
	7	Addition and subtraction facts within 10
Summer 1	8	Numbers 0 to 20
Summer 2	9	Unitising and coin recognition
	10	Position and direction
	11	Time



Year 1

Curriculum map

NCETM
NATIONAL CENTRE FOR EXCELLENCE IN THE TEACHING OF MATHEMATICS

June 2021

NCETM Curriculum Prioritisation and Oak Academy Curriculum Mapping

* highlights slight re-order in Y2 units

** highlights unit is not uploaded on oak yet

All NCETM and Oak units are hyperlinked to the corresponding web pages

Year 1

Unit	NCETM	Unit	Oak
1	**7 weeks** **Previous Reception experiences and counting within 100** **RTP:** • 1NPV–1 Count within 100, forwards and backwards, starting with any number. • 1.9 Composition of numbers: 20–100	1	**3 weeks (15 lessons)** Counting, recognising and comparing numbers 0 - 10
		2	**2 weeks (10 lessons)** Counting to and from 20
		3	**1 week (5 lessons)** Counting to and from 20
		4	**1 week (5 lessons)** Pattern in counting from 20 to 100
2	**3 weeks** **Comparison of quantities and part–whole relationships** **RTP:** • 1NPV–1 Count within 100, forwards and backwards, starting with any number. • 1NPV–2 Reason about the location of numbers to 20 within the linear number system, including comparing using < > and =. • 1.1 Comparison of quantities and measures • 1.2 Introducing 'whole' and 'parts': part–part–whole	5	**3 weeks (15 lessons)** Comparing quantities - part whole relationships
3	**2 weeks** **Numbers 0 to 5** **RTP:** • 1NPV–2 Reason about the location of numbers to 20 within the linear number system, including comparing using < > and =. • 1AS–1 Compose numbers to 10 from 2 parts, and partition numbers to 10 into parts, including recognising odd and even numbers. • 1.3 Composition of numbers: 0–5	6	**2 weeks (10 lessons)** Composition of numbers 0 to 5
4	**3 weeks** **Recognise, compose, decompose and manipulate 2D and 3D shapes** **RTP:** • 1G–1 Recognise common 2D and 3D shapes presented in different orientations, and know that rectangles, triangles, cuboids and pyramids are not always similar to one another. • 1G–2 Compose 2D and 3D shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations.	7	**3 weeks (15 lessons)** Recognise, compose, decompose and manipulate 2D and 3D shapes
5	**3 weeks** **Numbers 0 to 10** **RTP:** • 1NPV–2 Reason about the location of numbers to 20 within the linear number system, including comparing using < > and =. • 1AS–1 Compose numbers to 10 from 2 parts, and partition numbers to 10 into parts, including recognising odd and even numbers. • 1.4 Composition of numbers: 6–10	8	**3 weeks (15 lessons)** Composition of numbers 6 to 10

NCETM Curriculum Prioritisation and Oak Academy Curriculum Mapping

6	**4 weeks** **Additive structures** **RTP:** • 1AS–2 Read, write and interpret equations containing addition (+), subtraction (-) and equals (=) symbols, and relate additive expressions and equations to real-life contexts. • 1.5 Additive structures: introduction to aggregation and partitioning • 1.6 Additive structures: introduction to augmentation and reduction	9	**2 weeks (10 lessons)** Additive structures: addition
		10	**2 weeks (10 lessons)** Additive structures: addition and subtraction
7	**3 weeks** **Addition and subtraction facts within 10** **RTP:** • 1NF–1 Develop fluency in addition and subtraction facts within 10. • 1.7 Addition and subtraction: strategies within 10	11	**3 weeks (15 lessons)** Addition and subtraction facts within 10
8	**4 weeks** **Numbers 0 to 20** **RTP:** • 1NPV–2 Reason about the location of numbers to 20 within the linear number system, including comparing using < > and =. • 1.10 Composition of numbers: 11–19	12	**2 weeks (10 lessons)** Composition of numbers 11 to 19
		13	**2 weeks (10 lessons)** Numbers 0 to 20 in different contexts
9	**5 weeks** **Unitising and coin recognition** **RTP:** • 1NF–2 Count forwards and backwards in multiples of 2, 5 and 10, up to 10 multiples, beginning with any multiple, and count forwards and backwards through the odd numbers. • 2.1 Counting, unitising and coins	14	**2 weeks (10 lessons)** Unitising and coin recognition - counting in 2s, 5s and 10s
		15	**2 weeks (10 lessons)** Unitising and coin recognition - value of a set of coins
		16	**1 week (5 lessons)** Solving problems in a range of contexts
10	**1 week** **Position and direction** **RTP:** • **This topic is part of the National Curriculum but is not included in the DfE 2020 guidance or the NCETM Mastery PD Materials.**	17	**1 week (5 lessons)** Position and direction including fractions of turns
11	**2 weeks** **Time** • **This topic is part of the National Curriculum but is not included in the DfE 2020 guidance or the NCETM Mastery PD Materials.**	18	**2 weeks (10 lessons)** Time - sequencing events and telling the time to the hour and half hour

<table>
<tr><th colspan="2">Unit 1: Previous Reception Experiences and Counting within 100 (7 weeks)</th></tr>
<tr><td rowspan="2">NCETM Small Steps

Pupils count within 100 in different ways

See EYs Mastering Number Overviews.</td><td>Ready To Progress Criteria:

1NPV-1 – Count within 100, forwards and backwards, starting with any number

National curriculum objectives:

Count to an across 100, forwards and backwards, beginning with 0 or 1, or from any given number

Compare, describe and solve practical problems for:

• Lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]
• Mass/weight [for example, heavy/light, heavier than, lighter than]
• Capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]
• Time [for example, quicker, slower, earlier, later]</td></tr>
<tr><td>Sticky knowledge:

Children can count within 100, forwards and backwards, starting with any number</td></tr>
</table>

Unit 2: Comparison of quantities and part-whole relationships (3 weeks)

NCETM Small Steps

Pupils explain that items can be compared using length and height

Pupils explain that items can be compared using weight/mass and volume/capacity

Pupils count a set of objects

Pupils compare sets of objects

Pupils use equality and inequality symbols to compare sets of objects

Pupils use equality and inequality symbols to compare expressions

Pupils explain what a whole is

Pupils explain that a whole can be split into parts

Pupils explain that a whole can represent a group of objects

Pupils identify a part of a whole group

Pupils explain what a part-whole model is

Pupils use a part-whole model to represent a whole partitioned into two parts

Pupils use a part-whole model to represent a whole partitioned into more than two parts

Ready To Progress Criteria:

1NPV-1 – Count within 100, forwards and backwards, starting with any number

1NPV-2 – Reason about the location of numbers to 20 within the linear number system, including comparing using < > =

National curriculum objectives:

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; count in multiples of 2s, 5s and 10s

Given a number, identify 1 more and 1 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

Read and write numbers from 1 to 20 in numerals and words

Measure and begin to record the following:

- lengths and heights
- mass/weight
- capacity and volume

Sticky knowledge:

Children can count within 100, forwards and backwards, starting with any number

Children use <>= to compare

Children use a part-whole model to represent a whole split into parts

Unit 3: Numbers 0 to 5 (2 weeks)	
NCETM Small Steps Pupils explain that numbers can represent how many objects there are in a set Pupils explain that ordinal numbers show a position and not a set of objects Pupils partition numbers one to five in different ways Pupils partition the numbers one to five in a systematic way Pupils find a missing part when one part and the whole is known Pupils show one more and one less than a number using representations. Pupils describe this accurately. Pupils show one more and one less than a number using representations. Pupils describe this accurately. Pupils use a bar model to represent a whole partitioned into two parts	**Ready To Progress Criteria:** **1NPV-2 –** Reason about the location of numbers to 20 within the linear number system, including comparing using < > = **1AS-1 –** Compose numbers to 10 from 2 parts, and partition numbers to 10 into parts, including recognising odd and even numbers. **National curriculum objectives:** Count, read and write numbers to 100 in numerals Given a number, identify 1 more and 1 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 Read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs Represent and use number bonds and related subtraction facts within 20 Read and write numbers from 1 to 20 in numerals and words
	Sticky knowledge: Children can partition numbers within 5 in different ways Children can find one more and one less using representations.

Unit 4: Recognise, compose, decompose and manipulate 2D and 3D shapes (3 weeks)	
NCETM Small Steps Pupils compose pattern block images Pupils copy, extend and develop repeating and radiating pattern block patterns Pupils compose tangram images Pupils investigate tetromino and pentomino arrangements Pupils investigate ways that four cubes can be composed into different 3D models Pupils explore, discuss and compare 3D shapes Pupils identify 2D shapes within 3D shapes Pupils explore, discuss and compare 2D shapes Pupils explore, discuss and identify circles and shapes that are not circles from shape cut-outs Pupils explore, discuss and identify triangles and shapes that are not triangles from shape cut-outs Pupils explore, discuss and identify rectangles (including squares) from shape cut-outs	**Ready To Progress Criteria:** **1G-1 –** Recognise common 2D and 3D shapes presented in different orientations, and know that rectangles, triangles, cuboids and pyramids are not always similar to one another. **1G-2 –** Compose 2D and 3D shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations. **National curriculum objectives:** Compare, describe and solve practical problems for lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] Recognise and name common 2-d and 3-d shapes, including: • 2-d shapes [for example, rectangles (including squares), circles and triangles] • 3-d shapes [for example, cuboids (including cubes), pyramids and spheres] Describe position, direction and movement, including whole, half, quarter and three-quarter turns **Sticky knowledge:** Children can recognise different 2D and 3D shapes in a variety of orientations

Unit 5: Numbers 0 to 10 (3 weeks)	
NCETM Small Steps Pupils count a set of objects and match the spoken number to the written numeral and number name Pupils represent the numbers 6 to 10 using a five and a bit structure Pupils identify the whole and parts of the numbers 6 to 10 using the five and a bit structure Pupils explore the numbers 6 to 10 using the part whole model and the five and a bit structure Pupils explain where 6, 7, 8 and 9 lie on a number line Pupils explain what odd and even numbers are and the difference between them Pupils explain how even and odd numbers can be partitioned Pupils partition numbers 6 to 10 in different ways Pupils partition the numbers 6 to 10 in a systematic way Pupils identify a missing part when a whole is partitioned into two parts	**Ready To Progress Criteria:** **1NPV-2 –** Reason about the location of numbers to 20 within the linear number system, including comparing using < > = **1AS-1 –** Compose numbers to 10 from 2 parts, and partition numbers to 10 into parts, including recognising odd and even numbers. **National curriculum objectives:** Count, read and write numbers to 100 in numerals Given a number, identify 1 more and 1 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 Read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs Represent and use number bonds and related subtraction facts within 20 Read and write numbers from 1 to 20 in numerals and words **Sticky knowledge:** Children can partition numbers within 10 in different ways Children can identify and explain odd and even numbers.

Unit 6: Additive Structures (4 weeks)	
NCETM Small Steps Pupils combine two or more parts to make a whole Pupils explain that addends can be represented in any order. This is called the commutative law Pupils explain that the = sign can be used to show that the whole and the sum of the parts are equal (1) Pupils explain that the = sign can be used to show that the whole and the sum of the parts are equal (2) Pupils add parts to find the value of the whole and write the equation Pupils find the missing addend in an equation Pupils partition a whole into two parts and express this with a subtraction equation Pupils make addition and subtraction stories and write equations to match Pupils represent 'first, then, now' stories with addition equations (1) Pupils represent 'first, then, now' stories with addition equations (2) Pupils represent 'first, then, now' stories with subtraction equations (1) Pupils represent 'first, then, now' stories with subtraction equations (2) Pupils represent different types of stories with subtraction calculations Pupils make addition and subtraction stories, writing equations to match Pupils work out the missing part of an addition story and equation if the other two parts are known Pupils work out the missing part of a subtraction story and equation if the other two parts are known Pupils explain that addition and subtraction are inverse operations (1) Pupils explain that addition and subtraction are inverse operations (2) Pupils use additive structures to think about addition and subtraction equations in different ways	**Ready To Progress Criteria:** **1AS-2–** Read, write and interpret equations containing addition (+), subtraction (-) and equals (=) symbols, and relate additive expressions and equations to real-life contexts. **National curriculum objectives:** Read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs Represent and use number bonds and related subtraction facts within 20 Add and subtract one-digit and two-digit numbers to 20, including 0 Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ? − 9 Read and write numbers from 1 to 20 in numerals and words **Sticky knowledge:** Children can read and write addition and subtraction equations Children can link addition and subtraction equations to contexts and 'first, then, now' stories

Unit 7: Addition and Subtraction Facts within 10 (3 weeks)	
NCETM Small Steps Pupils explain that addition is commutative Pupils find pairs of numbers to 10 (1) Pupils find pairs of numbers to 10 (2) Pupils add and subtract 1 from any number Pupils explain what the difference is between consecutive numbers Pupils explain what happens when 2 is added to or subtracted from odd and even numbers Pupils explain what the difference is between consecutive odd and even numbers Pupils explain what happens when zero is added to or subtracted from a number Pupils explain what happens when a number is added to or subtracted from itself Pupils double numbers and explain what doubling means Pupils halve numbers and explain what halving means Pupils use knowledge of doubles and halves to calculate near doubles and halves Pupils represent different types of stories with subtraction calculations Pupils use knowledge and strategies to add 5 and 3 and 6 and 3	**Ready To Progress Criteria:** **1NF-1 –** Develop fluency in addition and subtraction facts within 10 **National curriculum objectives:** Given a number, identify 1 more and 1 less Read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs Represent and use number bonds and related subtraction facts within 20 Read and write numbers from 1 to 20 in numerals and words **Sticky knowledge:** Children can fluently recall addition and subtraction facts within 10

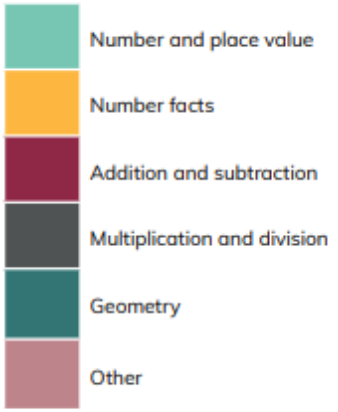
Unit 8: Numbers 0 to 20 (4 weeks)	
Pupils explain that the digits in the numbers 11 to 19 express quantity Pupils explain that the digits in the numbers 11 to 19 express position on a number line Pupils identify the quantity shown in a representation of numbers 11 to 19 Pupils use knowledge of '10 and a bit' to solve problems Pupils use knowledge of '10 and a bit' to solve problems Pupils explore odd and even numbers within 20 Pupils double the numbers 6 to 9 and halve the result, explaining what doubling and halving is Pupils use knowledge of addition facts within 10 to add within 20 Pupils use knowledge of subtraction facts within 10 to subtract within 20 Pupils use knowledge of addition and subtraction facts within 10 to add and subtract within 20 Pupils measure one object with different non-standard measures and record outcomes Pupils measure items using individual cm cubes (Dienes) Pupils measure length from zero cm using a ruler Pupils estimate length in cm Pupils estimate length, measure length and record these values in a table	**Ready To Progress Criteria:** **1NPV-2 –** Reason about the location of numbers to 20 within the linear number system, including comparing using < > = **National curriculum objectives:** Count, read and write numbers to 100 in numerals Given a number, identify 1 more and 1 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 Read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs Represent and use number bonds and related subtraction facts within 20 Read and write numbers from 1 to 20 in numerals and words **Sticky knowledge:** Children can partition numbers to 20 in different ways Children can double single digit numbers Children can use knowledge of number facts within 10 to add and subtract within 20. Children can estimate and measure lengths in centimetres.

Unit 9: Unitising and Coin Recognition (5 weeks)	
NCETM Small Steps Pupils count efficiently in groups of two Pupils count efficiently in groups of ten Pupils count efficiently in group of five Pupils count efficiently by counting in groups of two, five and ten Pupils explain the value of a 1p coin in pence Pupils recognise and explain the value of 2p, 5p and 10p coins Pupils explain that a single coin can be worth several pennies Pupils use knowledge of the value of coins to solve problems Pupils calculate the total value of the coins in a set of 2p coins Pupils calculate the total value of the coins in a set of 5p coins Pupils calculate the total value of the coins in a set of 10p coins Pupils compare sets of 2p, 5p and 10p coins Pupils relate what they have learnt to a real-life context Pupils work out how many coins are needed to make a value of 10p Pupils work out how many coins are needed to make a total value of 20p Pupils use knowledge of the value of coins to solve problems	**Ready To Progress Criteria:** **1NF-2 –** Count forwards and backwards in multiples of 2, 5 and 10, up to 10 multiples, beginning with any multiple, and count forwards and backwards through the odd numbers **National curriculum objectives:** 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 Recognise and know the value of different denominations of coins and notes **Sticky knowledge:** Children can count forwards and backwards in multiples of 2, 5 and 10

Unit 9: Position and Direction (1 week)	
NCETM Small Steps None	**Ready To Progress Criteria:** **1G-1 –** Recognise common 2D and 3D shapes presented in different orientations, and know that rectangles, triangles, cuboids and pyramids are not always similar to one another. **1G-2 –** Compose 2D and 3D shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations. **National curriculum objectives:** Describe position, direction and movement, including whole, half, quarter and three-quarter turns Recognise, find and name a half as 1 of 2 equal parts of an object, shape or quantity Recognise, find and name a quarter as 1 of 4 equal parts of an object, shape or quantity
	Sticky knowledge: Children can describe position, direction and movement using the vocabulary above.

Unit 11: Time (2 weeks)	
NCETM Small Steps None	**Ready To Progress Criteria:** None **National curriculum objectives:** Compare, describe and solve practical problems for time (for example quicker, slower, earlier, later) Measure and begin to record time (hours, minutes, seconds) Sequence events in chronological order using language (for example before, 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
	Sticky knowledge: Children can tell the time to the hour and half past the hour Children can sequence events in chronological order and use language relating to time

	Unit	Unit name
Autumn 1	1	Numbers 10 to 100
	2	Calculations within 20
Autumn 2	3	Fluently add and subtract within 10
	4	Addition and subtraction of two-digit numbers (1)
Spring 1	5	Introduction to multiplication
	6	Introduction to division structures
Spring 2	7	Shape
	8	Addition and subtraction of two-digit numbers (2)
Summer 1	9	Money
	10	Fractions
	11	Time
	12	Position and direction
Summer 2	13	Multiplication and division – doubling, halving, quotitive and partitive division
	14	Sense of measure – capacity, volume, mass



Year 2

Curriculum map

NCETM
NATIONAL CENTRE FOR EXCELLENCE IN THE TEACHING OF MATHEMATICS

June 2021

NCETM Curriculum Prioritisation and Oak Academy Curriculum Mapping

Year 2

Unit	NCETM	Unit	Oak
1	**4 weeks** **Numbers 10 to 100** RTP: • 2NPV–1 Recognise the place value of each digit in two-digit numbers, and compose and decompose two-digit numbers using standard and non-standard partitioning. • 2NPV–2 Reason about the location of any two-digit number in the linear number system, including identifying the previous and next multiple of 10. • 1.8 Composition of numbers: multiples of 10 up to 100 • 1.9 Composition of numbers: 20–100	1	**2 weeks (10 lessons)** Composition of multiples of 10
		2	**1 week (5 lessons)** Counting and representing the numbers 20 to 99
		3	**1 week (5 lessons)** Comparing, ordering and partitioning 2-digit numbers
2	**3 weeks** **Calculations within 20** RTP: • 2AS–1 Add and subtract across 10. • 2AS–2 Recognise the subtraction structure of 'difference' and answer questions of the form, "How many more…?". • 1.11 Addition and subtraction: bridging 10 • 1.12 Subtraction as difference	5*	**3 weeks (15 lessons)** Calculating within 20
3	**1 week** **Fluently add and subtract within 10** RTP: • 2NF–1 Secure fluency in addition and subtraction facts within 10, through continued practice. • 1.7 Addition and subtraction: strategies within 10	4*	**1 week (5 lessons)** Secure fluency of addition and subtraction facts within 10
4	**2 weeks** **Addition and subtraction of two-digit numbers (1)** RTP: • 2AS–3 Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract only ones or only tens to/from a two-digit number. • 1.13 Addition and subtraction: two-digit and single-digit numbers • 1.14 Addition and subtraction: two-digit numbers and multiples of ten	6*	**3 weeks (15 lessons)** Adding and subtracting ones and tens to and from 2-digit numbers
5	**7 weeks** **Introduction to multiplication** RTP: • 2MD–1 Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables. • 2.2 Structures: multiplication representing equal groups • 2.3 Times tables: groups of 2 and commutativity (part 1) • 2.4 Times tables: groups of 10 and of 5, and factors of 0 and 1 • 2.5 Commutativity (part 2), doubling and halving	7	**2 weeks (10 lessons)** Grouping objects in different ways and relating to multiplication
		8	**2 weeks (10 lessons)** **Representing counting in 2s and 10s as the 2 and 10 times tables**
		9	**2 weeks (10 lessons)** Representing counting in 5s as the 5 times table and link to the 10 times tables
		10	**1 week (5 lessons)** **Multiplying by 2, doubling and halving (factors and products)**
6	**2 weeks** **Introduction to division structures** RTP:	11	**2 weeks (10 lessons)** Introduction to division structures

NCETM Curriculum Prioritisation and Oak Academy Curriculum Mapping

	• 2MD–2 Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotitive division). • 2.6 Structures: quotitive and partitive division		
7	**2 weeks** **Shape** RTP: • 2G–1 Use precise language to describe the properties of 2D and 3D shapes, and compare shapes by reasoning about similarities and differences in properties.	12	**2 weeks (10 lessons)** Shape: discuss and compare 2D and 3D shapes
8	**3 weeks** **Addition and subtraction of two-digit numbers (2)** RTP: • 2AS–4 Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract any 2 two-digit numbers. • 1.15 Addition: two-digit and two-digit numbers • 1.16 Subtraction: two-digit and two-digit numbers	13	**3 weeks (15 lessons)** **Addition and subtraction of two 2-digit numbers**
9	**1 week** **Money** RTP: • **This topic is part of the National Curriculum but is not included in the DfE 2020 guidance or the NCETM Mastery Professional Development Materials.**	14	**1 week (5 lessons)** **Money: recognise coins and use £ and p symbols**
10	**2 weeks** **Fractions** RTP: • 3.0 Guidance on the teaching of fractions in Key Stage 1	15	**2 weeks (10 lessons)** **Fractions: identify equal parts and be familiar with halves, thirds and quarters**
11	**1 week** **Time** RTP: • **This topic is part of the National Curriculum but is not included in the DfE 2020 guidance or the NCETM Mastery Professional Development Materials.**	16	**1 week (5 lessons)** Time: write and tell the time to five minutes
12	**1 week** **Position and direction** RTP: • **This topic is part of the National Curriculum but is not included in the DfE 2020 guidance or the NCETM Mastery Professional Development Materials.**	17	**1 week (5 lessons)** **Position and direction**
13	**3 weeks** **Multiplication and division – doubling, halving, quotitive and partitive division** RTP: • 2.5 Commutativity (part 2), doubling and halving • 2.6 Structures: quotitive and partitive division	18	**3 weeks (15 lessons)** **Doubling, halving, quotative and partitive division**
14	**2 weeks** **Sense of measure – capacity, volume, mass** RTP: • **This topic is part of the National Curriculum but is not included in the DfE 2020 guidance or the NCETM Mastery Professional Development Materials.**	19	**2 weeks (10 lessons)** **Sense of measure - capacity, volume and mass**

Unit 1: Numbers 10 to 100 (4 weeks)	
NCETM Small Steps Pupils explain that one ten is equivalent to ten ones Pupils represent multiples of ten using their numerals Pupils represent multiples of ten using their numerals and names Pupils represent multiples of ten in an expression or an equation Pupils estimate the position of multiples of ten on a 0-100 number line Pupils explain what happens when you add and subtract ten to a multiple of ten Pupils use knowledge of facts and unitising to add and subtract multiples of ten Pupils add and subtract multiples of ten Pupils explore the counting sequence for counting to 100 and beyond Pupils count a large group of objects by counting groups of tens and the extra ones Pupils count a large group of objects by using knowledge of unitising by counting tens and ones Pupils represent a number from 20-99 in different ways Pupils explain and mark the position of numbers 20-99 on a number line Pupils explain that numbers 20-99 can be represented as a length Pupils compare two, two-digit numbers Pupils partition a two-digit number into tens and ones Pupils add two, two-digit numbers by partitioning into tens and ones	**Ready To Progress Criteria:** **2NPV-1 –** Recognise the place value of each digit in two-digit numbers, and compose and decompose two-digit numbers using standard and non-standard portioning **2NPV-2 –** Reason about the location of any two-digit number in the linear number system, including identifying the previous and next multiple of 10. **National curriculum objectives:** Count in steps of 2, 3 and 5 from 0, and in 10s from any number, forward and backward Recognise the place value of each digit in a two-digit number (10s, 1s) Identify, represent and estimate numbers using different representations, including the number line Compare and order numbers from 0 up to 100; use <, > and = signs Read and write numbers to at least 100 in numerals and in words Use place value and number facts to solve problems **Sticky knowledge:** Children can recognise the value of each digit in a two-digit number Children can place two-digit numbers in the linear number system

Unit 2: Calculations within 20 (3 weeks)	
Pupils add three addends Pupils use a 'First... Then... Now" story to add 3 addends Pupils explain that addends can be added in any order Pupils add 3 addends efficiently Pupils add 3 addends efficiently by finding two addends that total 10 Pupils add two numbers that bridge through 10 Pupils subtract two numbers that bridge through 10 Pupils compare numbers and describe how many more or less there are in each set Pupils calculate the difference Pupils use knowledge of subtraction to solve problems in a range of contexts Pupils explain what the difference is between consecutive numbers Pupils calculate difference when information is presented in a pictogram Pupils calculate difference when information is presented in a bar chart	**Ready To Progress Criteria:** **2AS-1 –** Add and subtract across 10 **2AS-2 -** Recognise the subtraction structure of difference and answer questions of the form, 'How many more...?' **National curriculum objectives:** Solve problems with addition and subtraction: • Using concrete objects and pictorial representations, including those involving numbers, quantities and measures • Applying their increasing knowledge of mental and written methods Recall and use addition and subtraction facts to 20 fluently Add and subtract numbers using concrete objects, pictorial representations, and mentally, including a two-digit number and 1s Show that addition of 2 numbers can be done in any order (commutative) and subtraction of 1 number from another cannot Interpret and construct simple pictograms, tally charts, block diagrams and tables Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity Ask-and-answer questions about totalling and comparing categorical data **Sticky knowledge:** Children can add and subtract fluently within 20 Children can use addition and subtraction to solve problems in a variety of contexts

Unit 3: Fluently add and subtract within 10 (1 week)	
NCETM Small Steps Pupils demonstrate their fluency of addition and subtraction within ten Pupils practise addition and subtraction strategies as required	**Ready To Progress Criteria:** **2NF-1 –** Secure fluency in addition and subtraction facts within 10, through continued practice **National curriculum objectives:** Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100
	Sticky knowledge: Children can fluently recall addition and subtraction facts within 10

Unit 4: Addition and Subtraction of two-digit numbers (1) (2 weeks)

NCETM Small Steps

Pupils add and subtract one to and from a two-digit number

Pupils add and subtract one to and from a two-digit number that crosses a tens boundary

Pupils add and subtract one from any two-digit number

Pupils use number facts to add a single-digit number to a two-digit number

Pupils use number facts to subtract a single-digit number from a two-digit number

Pupils use a part-part-whole model to represent addition and subtraction

Pupils use number bonds to ten to add a single-digit number to a two-digit number

Pupils use number bonds to ten to subtract a single-digit number from a two-digit number

Pupils use knowledge of 'make ten' to add a one-digit number to a two-digit number

Pupils use knowledge of 'make ten' to subtract a multiple of ten or a single-digit from a two-digit number

Pupils solve problems using knowledge of addition and subtraction

Pupils find ten more or ten less than a two-digit number (1)

Pupils find ten more or ten less than a two-digit number (2)

Pupils add and subtract ten to/from a two-digit number

Pupils explain the patterns when adding and subtracting ten

Pupils use knowledge of adding and subtracting ten to solve problems

Pupils use number facts to add a multiple of ten to a two-digit number

Pupils use number facts to subtract a multiple of ten from a two-digit number

Pupils partition a two-digit number into parts in different ways (two and three parts)

Pupils use knowledge of adding and subtracting multiples of ten to solve problems

Ready To Progress Criteria:

2AS-3 – Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract only ones or only tens to/from a two-digit number

National curriculum objectives:

Solve problems with addition and subtraction:

- Using concrete objects and pictorial representations, including those involving numbers, quantities and measures
- Applying their increasing knowledge of mental and written methods

Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100

Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:

- A two-digit number and 1s
- A two-digit number and 10s
- 2 two-digit numbers
- Adding 3 one-digit numbers

Show that addition of 2 numbers can be done in any order (commutative) and subtraction of 1 number from another cannot

Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems

Sticky knowledge:

Children can add and subtract any single-digit number to/from any two-digit number

Children can find 10 more/10 less than any two-digit number

Unit 5: Introduction to Multiplication (7 weeks)

NCETM Small Steps

Pupils explain that objects can be grouped in different ways

Pupils describe how objects have been grouped

Pupils represent equal groups as repeated addition

Pupils represent equal groups as repeated addition and multiplication

Pupils represent equal groups as multiplication

Pupils explain and represent multiplication when a group contains zero or one items

Pupils identify and explain each part of a multiplication equation

Pupils use knowledge of multiplication to calculate the product

Pupils represent the two times table in different ways

Pupils use knowledge of the two times table to solve problems

Pupils explain the relationship between adjacent multiples of two

Pupils explain that factor pairs can be written in any order

Pupils represent counting in tens as the ten times table

Pupils represent the ten times table in different ways

Pupils explain the relationship between adjacent multiples of ten

Pupils represent counting in fives as the five times table

Pupils represent the five times table in different ways

Pupils explain the relationship between adjacent multiples of five

Pupils explain how groups of five and ten are related

Pupils explain the relationship between multiples of five and ten

Pupils use knowledge of the relationships between the five and ten times tables to solve problems

Pupils explain how a factor of zero or one affect the product

Pupils represent multiplication equations in different ways

Pupils use knowledge of the two, five and ten times tables to solve problems (1)

Ready To Progress Criteria:

2MD-1 – Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables.

National curriculum objectives:

Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers

Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs

Show that multiplication of 2 numbers can be done in any order (commutative) and division of 1 number by another cannot

Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts

Sticky knowledge:

Children can link repeated addition and multiplication

Children can count in multiples of 2, 5 and 10

Children can represent multiplication equations

Children can double and halve two-digit numbers

Pupils use knowledge of the two, five and ten times tables to solve problems (2) Pupils explain what each factor represents in a multiplication story Pupils explain what each factor represents in a multiplication story when one of the factors is one Pupils explain how a multiplication equation with two as a factor is related to doubling Pupils double two-digit numbers Pupils multiply efficiently when one of the factors is two Pupils explain how halving and doubling are related Pupils explain the relationship between factors and products Pupils halve two-digit numbers Pupils use knowledge of doubling, halving and the two times table to solve problems	

Unit 6: Introduction to Division Structures (2 weeks)	
NCETM Small Steps Pupils explain that objects can be grouped equally Pupils identify and explain when objects cannot be grouped equally Pupils explain the relationship between division expressions and division stories Pupils calculate the number of equal groups in a division story Pupils use their knowledge of skip counting and division to solve problems relating to measure Pupils skip count using the divisor to find the quotient Pupils use their knowledge of division to solve problems Pupils explain that objects can be shared equally Pupils use skip counting to solve a sharing problem Pupils skip count using the divisor to find the quotient Pupils solve a variety of division problems, explaining their understanding	**Ready To Progress Criteria:** **2MD-2 –** Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotitive division) **National curriculum objectives:** Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs Show that multiplication of 2 numbers can be done in any order (commutative) and division of 1 number by another cannot Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts **Sticky knowledge:** Children can link division to equal groups Children can use skip counting to solve division problems

Unit 7: Shape (2 weeks)	
NCETM Small Steps Pupils learn that a polygon is a 2D shape with straight sides that meet at vertices Pupils describe polygons and find different ways to sort them Pupils learn that polygons can be sorted and named according to the number of sides and vertices Pupils discuss, and compare by direct comparison, the shape and size of polygons Pupils discuss, and compare by direct comparison, the vertices of polygons Pupils investigate how polygons can be joined and folded to form 3-dimensional shapes Pupils describe 3-dimensional shapes and find different ways to sort them Pupils discuss, and compare by direct comparison, the shape and size of 3-dimensional shapes	**Ready To Progress Criteria:** **2G-1 –** Use precise language to describe the properties of 2D and 3D shapes, and compare shapes by reasoning about similarities and differences in properties **National curriculum objectives:** Identify and describe the properties of 2-D shapes, including the number of sides, and line symmetry in a vertical line Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] Compare and sort common 2-D and 3-D shapes and everyday objects **Sticky knowledge:** Children can discuss and compare a variety of polygons Children can discuss and compare a variety of 3D shapes

Unit 8: Shape (3 weeks)

NCETM Small Steps

Pupils explain strategies used to add

Pupils add a two-digit number to a two-digit number

Pupils add a two-digit number to a two-digit number when not crossing ten (i)

Pupils add a two-digit number to a two-digit number when not crossing ten (ii)

Pupils add a two-digit number to a two-digit number when crossing ten

Pupils explain strategies used to subtract

Pupils subtract a two-digit number from a two-digit number

Pupils partition the subtrahend to help with subtraction

Pupils subtract a two-digit number from a two-digit number when not crossing ten (i)

Pupils subtract a two-digit number from a two-digit number when not crossing ten (ii)

Pupils subtract a two-digit number from a two-digit number when crossing ten

Pupils subtract efficiently using knowledge of two-digit numbers

Ready To Progress Criteria:

2AS-4 – Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract any 2 two-digit numbers

National curriculum objectives:

Solve problems with addition and subtraction:

- Using concrete objects and pictorial representations, including those involving numbers, quantities and measures
- Applying their increasing knowledge of mental and written methods

Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100

Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:

- A two-digit number and 1s
- A two-digit number and 10s
- 2 two-digit numbers
- Adding 3 one-digit numbers

Show that addition of 2 numbers can be done in any order (commutative) and subtraction of 1 number from another cannot

Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems

Sticky knowledge:

Children can add and subtract any two-digit number

Unit 9: Money (1 week)	
NCETM Small Steps None	**Ready To Progress Criteria:** None **National curriculum objectives:** Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value Find different combinations of coins that equal the same amounts of money Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.
	Sticky knowledge: Children can add and subtract money of the same unit Children can give change

Unit 10: Fractions (2 weeks)	
NCETM Small Steps Pupils identify whether something has or has not been split into equal parts Pupils name the fraction 'one-half' in relation to a fraction of a length, shape or set of objects Pupils name the fraction 'one-quarter' in relation to a fraction of a length, shape or set of objects Pupils name the fraction 'one-third' in relation to a fraction of a length, shape or set of objects Pupils read and write the fraction notation ½, ⅓ and ¼ and relate this to a fraction of a length, shape or set of objects Pupils find half of numbers Pupils find ⅓ or ¼ of a number Pupils find ¼ and ¾ of an object, shape, set of objects, length or quantity Pupils recognise the equivalence of 2/4 and ½	**Ready To Progress Criteria:** None **National curriculum objectives:** Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity Write simple fractions, for example $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$ **Sticky knowledge:** Children can recognise and interpret common fractions

Unit 11: Time (1 week)	
NCETM Small Steps None	**Ready To Progress Criteria:** None **National curriculum objectives:** Compare and sequence intervals of time 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 the number of minutes in an hour and the number of hours in a day
	Sticky knowledge: Children can tell the time to the nearest 5 minutes.

Unit 12: Position and Direction (1 week)	
NCETM Small Steps None	**Ready To Progress Criteria:** None **National curriculum objectives:** Order and arrange combinations of mathematical objects in patterns and sequences 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 three-quarter turns (clockwise and anti-clockwise).
	Sticky knowledge: Children can describe position, direction and movement in terms of right angles, quarter, half and three-quarter turns. Children can identify clockwise and anti-clockwise directions

Unit 13: Multiplication and Division – Doubling, Halving, Quotitive and Partitive Division (3 weeks)	
NCETM Small Steps Pupils identify the patterns and relationships between the 5 and 10 times tables Pupils explain the patterns and relationships between the 5 and 10 times tables Pupils use their knowledge of the 5 and 10 times tables to solve problems Pupils identify and explain relationships between the 5 and the 10 times tables Pupils use their knowledge of the 5 and 10 times tables to solve problems Pupils explain how times table facts can help to find the quotient (10 times table) Pupils explain how times table facts can help to find the quotient (5 times table) Pupils explain how times table facts can help to find the quotient (2 times table) Pupils explain how a division equation with 2 as a divisor is related to halving Pupils explain each part of a division equation and know how they can be interchanged Pupils use knowledge of divisibility rules when the divisor is 2 to solve problems Pupils use knowledge of divisibility rules when then divisor is 10 to solve problems Pupils use knowledge of divisibility rules when the divisor is 5 to solve problems Pupils explain how a dividend of zero affects the quotient Pupils explain how the quotient is affected when the divisor is equal to the dividend Pupils explain how a divisor of one affects the quotient	**Ready To Progress Criteria:** **2MD-1 –** Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables. **2MD-2 –** Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotitive division) **National curriculum objectives:** Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs Show that multiplication of 2 numbers can be done in any order (commutative) and division of 1 number by another cannot Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts **Sticky knowledge:** Children can identify patterns and relationships involving the 2, 5 and 10 times tables

Unit 14: Sense of Measure – Capacity, Volume, Mass (2 weeks)	
NCETM Small Steps None	**Ready To Progress Criteria:** None **National curriculum objectives:** 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 Compare and order lengths, mass, volume/capacity and record the results using >, < and = . **Sticky knowledge:** Children can estimate, measure, compare and order units of measure using rulers, scales, thermometers and measuring vessels