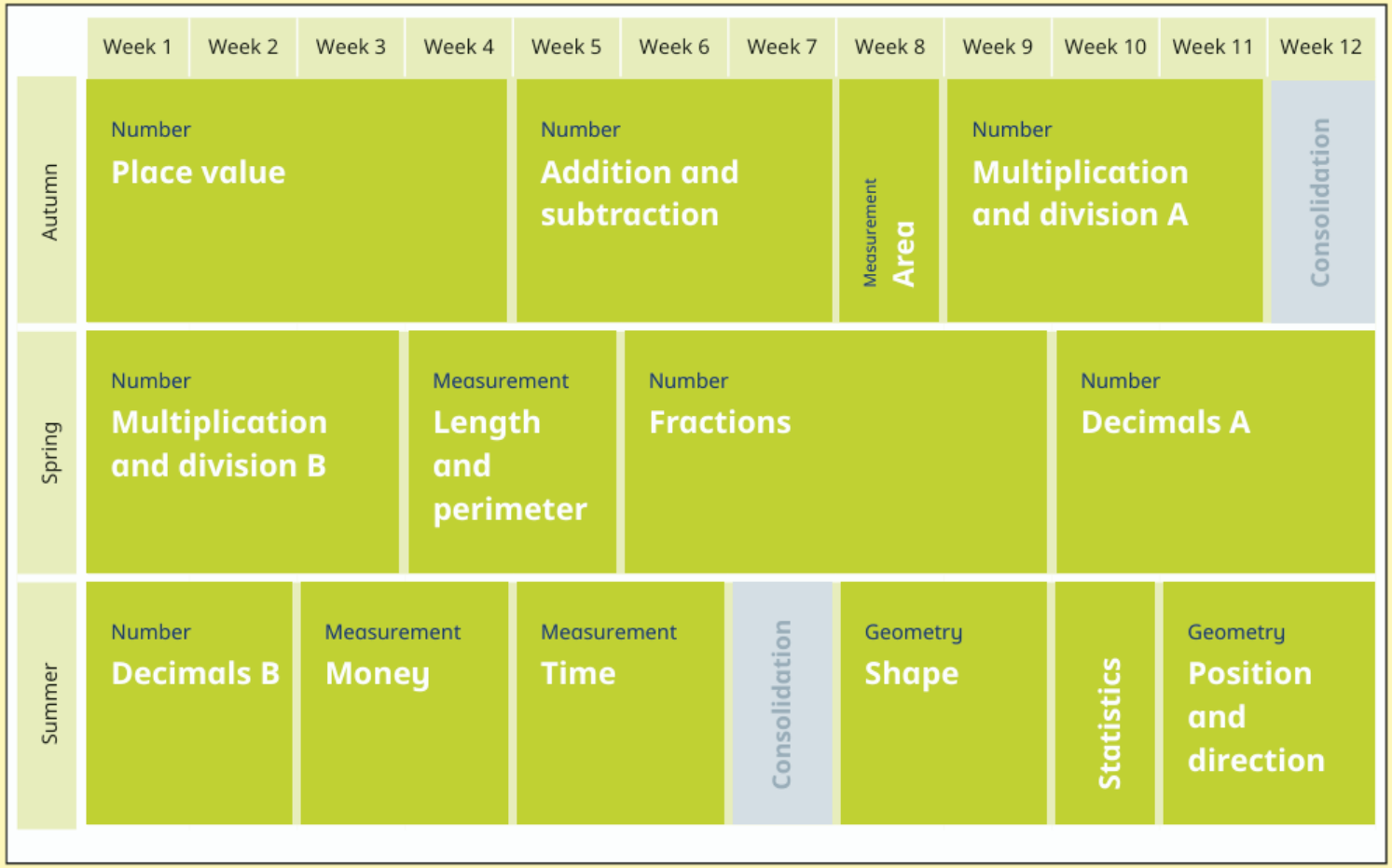
Kingsland CE Primary School

Maths Curriculum Year 4

Yearly overview

The yearly overview provides suggested timings for each block of learning, which can be adapted to suit different term dates or other requirements.



Autumn Term Weeks 1 – 4

Place value

Y4 Autumn Term Scheme of Learning.pdf

NCETM links	National Curriculum	National Curriculum non-statutory guidance	NRich Problem Solving	Ready to Progress
Composition and calculation: 1,000 and four-digit numbers | NCETM **1.22 Composition and calculation**: 1,000 and four-digit numbers Explore the composition of 1,000 and four-digit numbers, using the partitioning structure, and make links to measures; introduce children to calculation across thousands boundaries, and extend column algorithms and rounding to four-digit numbers. • **Teaching point 1**: Ten hundreds make 1,000, which can also be decomposed into 100 tens and 1,000 ones. • **Teaching point 2**: When multiples of 100 are added or subtracted, the sum or difference is always a multiple of 100. • **Teaching point 3**: Numbers over 1,000 have a structure that relates to their size. This means they can be ordered, composed and decomposed. • **Teaching point 4**: Numbers can be rounded to simplify calculations or to indicate approximate sizes. • **Teaching point 5**: Calculation approaches learnt for three-digit numbers can be applied to four-digit numbers. • **Teaching point 6**: 1,000 can also be composed multiplicatively from 500s, 250s or 200s, units that are commonly used in graphing and measures.	Count in multiples of 6, 7, 9, 25 and 1000 Find 1000 more or less than a given number Count backwards through zero to include negative numbers Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) Order and compare numbers beyond 1000 Identify, represent and estimate numbers using different representations Round any number to the nearest 10, 100 or 1000 Solve number and practical problems that involve all of the above and with increasingly large positive numbers Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the	Using a variety of representations, including measures, pupils become fluent in the order and place value of numbers beyond 1000, including counting in tens and hundreds, and maintaining fluency in other multiples through varied and frequent practice. They begin to extend their knowledge of the number system to include the decimal numbers and fractions that they have met so far. They connect estimation and rounding numbers to the use of measuring instruments. Roman numerals should be put in their historical context so pupils understand that there have been different ways to write whole numbers and that the important concepts of zero and place value were introduced over a period of time.	Count Me In Representing Numbers Four-digit targets Nice or Nasty	4NPV–1 Know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100; apply this to identify and work out how many 100s there are in other four-digit multiples of 100. 4NPV–2 Recognise the place value of each digit in four-digit numbers, and compose and decompose four-digit numbers using standard and non standard partitioning. 4NPV–3 Reason about the location of any four digit number in the linear number system,

	concept of zero and place value.			including identifying the previous and next multiple of 1,000 and 100, and rounding to the nearest of each.

Autumn Term Weeks 5 – 7				
Addition and Subtraction **Y4 Autumn Term Scheme of Learning.pdf**				
NCETM links	**National Curriculum**	**National Curriculum non-statutory guidance**	**NRich Problem Solving**	**Ready to Progress**
N/A This White Rose unit focuses on addition and subtraction using formal algorithms.	Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate Estimate and use inverse operations to check answers to a calculation Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.	Pupils continue to practise both mental methods and columnar addition and subtraction with increasingly large numbers to aid fluency		

Autumn Term Week 8 (and Spring Term weeks 4 – 5)				
Measurement – Area **Y4 Autumn Term Scheme of Learning.pdf and Y4 Spring Term Scheme of Learning.pdf**				
NCETM links	**National Curriculum**	**National Curriculum non-statutory guidance**	**NRich Problem Solving**	**Ready to Progress**
It is suggested that this AREA unit is combined with the Spring term LENGTH AND PERIMETER unit – all to be done in the Spring term, after the multiplication units				
Multiplicative contexts: area and perimeter 1 | NCETM **2.16 Multiplicative contexts: area and perimeter 1** Use addition and multiplication to solve problems about the perimeter of irregular and regular 2D shapes, and to find the area of rectilinear and composite rectilinear shapes; use division to solve associated inverse problems. • **Teaching point 1**: Perimeter is the distance around the edge of a two-dimensional (2D) shape. • **Teaching point 2**: Perimeter is measured in units of length and can be calculated by adding together the lengths of the sides of a 2D shape. • **Teaching point 3**: Multiplication can be used to calculate the perimeter of a regular polygon; when the perimeter is known, side-lengths can be calculated using division. • **Teaching point 4**: Area is the measurement of the surface of a flat item. • **Teaching point 5**: Area is measured in square units, such as square centimetres (cm^2) and square metres (m^2). • **Teaching point 6**: The area of a rectangle can be calculated using multiplication; the area of a composite rectilinear shape can be found by splitting the shape into smaller rectangles.	Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres Find the area of rectilinear shapes by counting squares	Perimeter can be expressed algebraically as 2(a + b) where a and b are the dimensions in the same unit. They relate area to arrays and multiplication.		4G–2 Identify regular polygons, including equilateral triangles and squares, as those in which the side-lengths are equal and the angles are equal. Find the perimeter of regular and irregular polygons.
Structures: using measures and comparison to understand scaling | NCETM **2.17 Structures: using measures and comparison to understand scaling** Build on segment 2.13 to introduce the scaling structure of	Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such	Pupils solve two-step problems in contexts, choosing the appropriate operation, working with increasingly harder numbers. This should include correspondence questions such as the numbers of choices of a		

multiplication and division; use known multiplication and division strategies to solve problems about scaling/comparison problems. • **Teaching point 1**: A longer length can be described in terms of a shorter length using the language of 'times'; the longer length can be calculated, if the shorter length is known, using multiplication. • **Teaching point 2**: A shorter length can be described in terms of a longer length using the language of fractions; the shorter length can be calculated, if the longer length is known, using division. • **Teaching point 3**: Other measures can be compared using the language of 'times' and fractions, and calculated using multiplication or division.	as n objects are connected to m objects.	meal on a menu, or three cakes shared equally between 10 children.		

Autumn Term Weeks 9 – 11				
Multiplication and Division A **Y4 Autumn Term Scheme of Learning.pdf**				
NCETM links	**National Curriculum**	**National Curriculum non-statutory guidance**	**NRich Problem Solving**	**Ready to Progress**
Connecting multiplication and division, and the distributive law | NCETM **2.10 Connecting multiplication and division, and the distributive law** Explore why multiplication is commutative while division is not. Build on understanding of the difference between adjacent multiples to explore the distributive law, and apply it to derive multiplication facts. • **Teaching point 1**: Multiplication is commutative; division is not commutative. • **Teaching point 2**: Multiplication is distributive: multiplication facts can be derived from related known facts by partitioning one of the factors, and this can be interpreted as partitioning the number of groups; two-part problems that involve	Recall multiplication and division facts for multiplication tables up to 12 × 12 Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers Multiply two-digit and three-digit numbers by a one-digit	Pupils continue to practise recalling and using multiplication tables and related division facts to aid fluency. Pupils practise mental methods and extend this to three-digit numbers to derive facts, (for example 600 ÷ 3 = 200 can be derived from 2 x 3 = 6). Pupils practise to become fluent in the formal written method of short multiplication and short	Carrying Cards Table patterns go wild! Four Go Climbing Conundrum Digit Discovery	4NF–1 Recall multiplication and division facts up to 12x12 , and recognise products in multiplication tables as multiples of the corresponding number.

addition/subtraction of products with a common factor can be efficiently solved by applying the distributive law. • **Teaching point 3**: The distributive law can be used to derive multiplication facts beyond known times tables. **Times tables: 11 and 12 | NCETM** **2.11 Times tables: 11 and 12** Build up the eleven and twelve times tables using the distributive law, and solve associated multiplication and division problems. Combine known six times table facts with doubling facts and strategies to multiply by twelve. • **Teaching point 1**: The distributive law can be used to build up the 11 times table by partitioning 11 into 10 and 1. Adjacent multiples of 11 have a difference of 11. • **Teaching point 2**: The distributive law can be used to build up the 12 times table by partitioning 12 into 10 and 2. Adjacent multiples of 12 have a difference of 12. • **Teaching point 3**: Products in the 12 times table are double the products in the six times table; products in the six times table are half of the products in the 12 times table. • **Teaching point 4**: Divisibility rules can be used to find out whether a given number is divisible (to give a whole number) by 11 or 12.	number using formal written layout Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.	division with exact answers (see Mathematics Appendix 1). Pupils write statements about the equality of expressions (for example, use the distributive law 39 × 7 = 30 × 7 + 9 × 7 and associative law (2 × 3) × 4 = 2 × (3 × 4)). They combine their knowledge of number facts and rules of arithmetic to solve mental and written calculations for example, 2 x 6 x 5 = 10 x 6 = 60. Pupils solve two-step problems in contexts, choosing the appropriate operation, working with increasingly harder numbers. This should include correspondence questions such as the numbers of choices of a meal on a menu, or three cakes shared equally between 10 children.		4MD–2 Manipulate multiplication and division equations, and understand and apply the commutative property of multiplication. 4MD–3 Understand and apply the distributive property of multiplication.

Division with remainders | NCETM **2.12 Division with remainders** Explore how some quantities can be split into equal groups with a remainder, and express this using mathematical notation; practise interpreting the meaning of the remainder in different contexts. • **Teaching point 1**: Objects can be divided into equal groups, sometimes with a remainder; objects can be shared equally, sometimes with a remainder; a remainder can be represented as part of a division equation. • **Teaching point 2**: If the dividend *is* a multiple of the divisor, there is *no* remainder; if the dividend *is not* a multiple of the divisor, there *is* a remainder. The remainder is always less than the divisor. • **Teaching point 3**: When solving contextual problems involving remainders, the answer to a division calculation must be interpreted carefully to determine how to make sense of the remainder.	Recall multiplication and division facts for multiplication tables up to 12 × 12 Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers Multiply two-digit and three-digit numbers by a one-digit number using formal written layout Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.	Pupils continue to practise recalling and using multiplication tables and related division facts to aid fluency. Pupils practise mental methods and extend this to three-digit numbers to derive facts, (for example 600 ÷ 3 = 200 can be derived from 2 x 3 = 6). Pupils practise to become fluent in the formal written method of short multiplication and short division with exact answers (see Mathematics Appendix 1). Pupils write statements about the equality of expressions (for example, use the distributive law 39 × 7 = 30 × 7 + 9 × 7 and associative law (2 × 3) × 4 = 2 × (3 × 4)). They combine their knowledge of number facts and rules of arithmetic to solve mental and written calculations for example, 2 x 6 x 5 = 10 x 6 = 60. Pupils solve two-step problems in contexts, choosing the appropriate operation, working with increasingly harder numbers. This should include correspondence questions such as the numbers of choices of a meal on a menu, or three cakes shared equally between 10 children.	Remainders The Remainders Game	4NF–2 Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders, and interpret remainders appropriately according to the context.

End of term assessment

Spring Term Weeks 1 – 3

Multiplication and Division B

Y4 Spring Term Scheme of Learning.pdf

NCETM links	National Curriculum	National Curriculum non-statutory guidance	NRich Problem Solving	Ready to Progress
Calculation: multiplying and dividing by 10 or 100 | NCETM **2.13 Calculation: multiplying and dividing by 10 or 100** Use place-value knowledge to develop strategies for multiplying/dividing by 10 and 100. Generalise about the product or quotient when a factor or the dividend is made 10 or 100 times bigger/smaller. • **Teaching point 1**: Finding 10 times as many is the same as multiplying by 10 (for positive numbers); to multiply a whole number by 10, place a zero after the final digit of that number. • **Teaching point 2**: To divide a multiple of 10 by 10, remove the final zero digit (in the ones place) from that number. • **Teaching point 3**: Finding 100 times as many is the same as multiplying by 100 (for positive numbers); to multiply a whole number by 100, place two zeros after the final digit of that number. • **Teaching point 4**: To divide a multiple of 100 by 100, remove the final two zero digits (in the tens and ones places) from that number. • **Teaching point 5**: Multiplying a number by 100 is equivalent to multiplying by 10, and then multiplying the product by 10. Dividing a multiple of 100 by 100 is equivalent to dividing by 10, and then dividing the quotient by 10. • **Teaching point 6**: If one factor is made 10 times the size, the product will be 10 times the size. If the dividend is made 10 times the size, the quotient will be 10 times the size. • **Teaching point 7**: If one factor is made 100 times the size, the product will be 100 times the size. If the dividend is made 100 times the size, the quotient will be 100 times the size	Recognise and use factor pairs and commutativity in mental calculations Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers	Pupils practise mental methods and extend this to three-digit numbers to derive facts, (for example 600 ÷ 3 = 200 can be derived from 2 x 3 = 6).		4NF–3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100) 4MD–1 Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size.

Multiplication: partitioning leading to short multiplication | NCETM **2.14 Multiplication partitioning leading to short multiplication** Introduce the short multiplication algorithm, using it to multiply two-/three-digit numbers by single-digit numbers; explore regrouping where necessary. • **Teaching point 1**: The distributive law can be applied to multiply any two-digit number by a single-digit number, by partitioning the two-digit number into tens and ones, multiplying the parts by the single-digit number, then adding the partial products. • **Teaching point 2**: Any two-digit number can be multiplied by a single-digit number using an algorithm called *'short multiplication'*; the digits of the factors must be aligned correctly; the algorithm is applied working from the least significant digit (on the right) to the most significant digit (on the left); if the product in any column is ten or greater, we must *'regroup'*. • **Teaching point 3**: The distributive law can be applied to multiply any three-digit number by a single-digit number, by partitioning the three-digit number into hundreds, tens and ones, multiplying the parts by the single-digit number, then adding the partial products. • **Teaching point 4**: Any three-digit number can be multiplied by a single-digit number using the short multiplication algorithm.	Recall multiplication and division facts for multiplication tables up to 12 × 12 Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers Recognise and use factor pairs and commutativity in mental calculations Multiply two-digit and three-digit numbers by a one-digit number using formal written layout Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to objects.	Pupils continue to practise recalling and using multiplication tables and related division facts to aid fluency. Pupils practise mental methods and extend this to three-digit numbers to derive facts, (for example 600 ÷ 3 = 200 can be derived from 2 x 3 = 6). Pupils practise to become fluent in the formal written method of short multiplication and short division with exact answers Pupils write statements about the equality of expressions (for example, use the distributive law 39 × 7 = 30 × 7 + 9 × 7 and associative law (2 × 3) × 4 = 2 × (3 × 4)). They combine their knowledge of number facts and rules of arithmetic to solve mental and written calculations for example, 2 x 6 x 5 = 10 x 6 = 60. Pupils solve two-step problems in contexts, choosing the appropriate operation, working with increasingly harder numbers. This should include correspondence questions such as the numbers of choices of a meal on a menu, or three cakes	Multiples Grid Multiplication Square Jigsaw	4NF–1 Recall multiplication and division facts up to 12x12 , and recognise products in multiplication tables as multiples of the corresponding number.
Division: partitioning leading to short division | NCETM **2.15 Division: partitioning leading to short division** Introduce the short division algorithm, using it to divide two-/three-digit numbers by single-digit numbers; explore exchange where necessary. • **Teaching point 1**: Any two-digit number can be divided by a single-digit number, by partitioning the two-digit number into tens and ones, dividing the parts by the single-digit number, then adding the partial quotients; if dividing the tens gives a remainder of one or more tens, we must exchange the remaining tens for ones before dividing the resulting ones value by the single-digit number. • **Teaching point 2**: Any two-digit number can be divided by a single-digit number using an algorithm called *'short division'*;			Let us divide!	4NF–2 Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders, and interpret remainders appropriately according to the context.

the algorithm is applied working from the most significant digit (on the left) to the least significant digit (on the right); if there is a remainder in the tens column, we must *'exchange'*. • **Teaching point 3**: Any three-digit number can be divided by a single-digit number, by partitioning the two-digit number into hundreds, tens and ones, dividing the parts by the single-digit number, then adding the partial quotients; if dividing the hundreds gives a remainder of one or more hundreds, we must exchange the remaining hundreds for tens before dividing the resulting tens value by the single-digit number. • **Teaching point 4**: Any three-digit number can be divided by a single-digit number using the short-division algorithm.		shared equally between 10 children		

Spring Term Weeks 4 – 5 (and Autumn Term Week 8)				
Measurement – Length and Perimeter **Y4 Spring Term Scheme of Learning.pdf and Y4 Autumn Term Scheme of Learning.pdf**				
NCETM links	**National Curriculum**	**National Curriculum non-statutory guidance**	**NRich Problem Solving**	**Ready to Progress**
It is suggested that this AREA unit is combined with the Spring term LENGTH AND PERIMETER unit – all to be done in the Spring term, after the multiplication units				
Multiplicative contexts: area and perimeter 1 | NCETM **2.16 Multiplicative contexts: area and perimeter 1** Use addition and multiplication to solve problems about the perimeter of irregular and regular 2D shapes, and to find the area of rectilinear and composite rectilinear shapes; use division to solve associated inverse problems. • **Teaching point 1**: Perimeter is the distance around the edge of a two-dimensional (2D) shape. • **Teaching point 2**: Perimeter is measured in units of length and can be calculated by adding together the lengths of the sides of a 2D shape.	Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres Find the area of rectilinear shapes by counting squares	Perimeter can be expressed algebraically as 2(a + b) where a and b are the dimensions in the same unit. They relate area to arrays and multiplication.		4G–2 Identify regular polygons, including equilateral triangles and squares, as those in which the side-lengths are equal and the angles are equal. Find the perimeter of regular and

• **Teaching point 3**: Multiplication can be used to calculate the perimeter of a regular polygon; when the perimeter is known, side-lengths can be calculated using division. • **Teaching point 4**: Area is the measurement of the surface of a flat item. • **Teaching point 5**: Area is measured in square units, such as square centimetres (cm^2) and square metres (m^2). • **Teaching point 6**: The area of a rectangle can be calculated using multiplication; the area of a composite rectilinear shape can be found by splitting the shape into smaller rectangles.				irregular polygons.
Structures: using measures and comparison to understand scaling | NCETM **2.17 Structures: using measures and comparison to understand scaling** Build on segment 2.13 to introduce the scaling structure of multiplication and division; use known multiplication and division strategies to solve problems about scaling/comparison problems. • **Teaching point 1**: A longer length can be described in terms of a shorter length using the language of 'times'; the longer length can be calculated, if the shorter length is known, using multiplication. • **Teaching point 2**: A shorter length can be described in terms of a longer length using the language of fractions; the shorter length can be calculated, if the longer length is known, using division. • **Teaching point 3**: Other measures can be compared using the language of 'times' and fractions, and calculated using multiplication or division.	Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.	Pupils solve two-step problems in contexts, choosing the appropriate operation, working with increasingly harder numbers. This should include correspondence questions such as the numbers of choices of a meal on a menu, or three cakes shared equally between 10 children.		

Spring Term Weeks 6 – 9

Fractions

Y4 Spring Term Scheme of Learning.pdf

NCETM links	National Curriculum	National Curriculum non-statutory guidance	NRich Problem Solving	Ready to Progress
Working across one whole: improper fractions and mixed numbers | NCETM **3.5 Working across one whole: improper fractions and mixed numbers** Meet mixed numbers and improper fractions, and learn to convert between them; compare, order and place them on a number line. Extend addition and subtraction from within a whole to numbers greater than one whole. • **Teaching point 1**: Quantities made up of both wholes and parts can be expressed as mixed numbers. • **Teaching point 2**: Mixed numbers can be placed on a number line. • **Teaching point 3**: Understanding how to compare and order proper fractions supports the comparison and ordering of mixed numbers. • **Teaching point 4**: Mixed numbers can be partitioned and combined in the same way as whole numbers. • **Teaching point 5**: Mixed numbers can be written as improper fractions. • **Teaching point 6**: Improper fractions can be added and subtracted in the same way as proper fractions.	Recognise and show, using diagrams, families of common equivalent fractions Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number Add and subtract fractions with the same denominator	Pupils should connect hundredths to tenths and place value and decimal measure. They extend the use of the number line to connect fractions, numbers and measures. Pupils understand the relation between non-unit fractions and multiplication and division of quantities, with particular emphasis on tenths and hundredths. Pupils make connections between fractions of a length, of a shape and as a representation of one whole or set of quantities. Pupils use factors and multiples to recognise equivalent fractions and simplify where appropriate (for example, 6/9 = 2/3 or 1/4= 2/8) Pupils continue to practise adding and subtracting fractions with the same denominator, to become fluent through a variety of increasingly complex problems beyond one whole.	Fractional Triangles Fractional Wall Chocolate Fractions in a Box Andy's Marbles	4F–1 Reason about the location of mixed numbers in the linear number system. 4F–2 Convert mixed numbers to improper fractions and vice versa. 4F–3 Add and subtract improper and mixed fractions with the same denominator, including bridging whole numbers.
Multiplying whole numbers and fractions | NCETM **3.6 Multiplying whole numbers and fractions** Consider multiplication of whole numbers and proper fractions as both repeated addition and scaling. Understand that multiplication of a whole number by a proper fraction results in a smaller number. • **Teaching point 1**: Repeated addition of proper and improper fractions can be expressed as multiplication of a fraction by a whole number.				

• **Teaching point 2**: Repeated addition of a mixed number can be expressed as multiplication of a mixed number by a whole number. • **Teaching point 3**: Finding a unit fraction of a quantity can be expressed as a multiplication of a whole number by a fraction. • **Teaching point 4**: A non-unit fraction of a quantity can be calculated by first finding a unit fraction of that quantity. • **Teaching point 5**: If the size of a non-unit fraction is known, the size of the unit fraction and then the size of the whole can be found.				

Spring Term Weeks 10 – 12				
Decimals A Y4 Spring Term Scheme of Learning.pdf				
NCETM links	**National Curriculum**	**National Curriculum non-statutory guidance**	**NRich Problem Solving**	**Ready to Progress**
Composition and calculation: tenths | NCETM **1.23 Composition and calculation: tenths** Introduce children to tenths using both the partitioning structure and ideas of place value; apply additive facts and strategies, including column algorithms, and rounding to numbers with tenths. • **Teaching point 1**: When one is divided into ten equal parts, each part is one tenth of the whole. • **Teaching point 2**: Tenths can be expressed as decimal fractions; the number written '0.1' is one tenth; one is ten times the size of 0.1. • **Teaching point 3**: We can count in tenths up to and beyond one. • **Teaching point 4**: Numbers with tenths can be composed additively and multiplicatively. • **Teaching point 5**: Known facts and strategies, including column algorithms, can be applied to calculations for numbers with tenths.	Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. Recognise and write decimal equivalents of any number of tenths or hundredths Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths Round decimals with one decimal place to the nearest whole number	Pupils should connect hundredths to tenths and place value and decimal measure Pupils are taught throughout that decimals and fractions are different ways of expressing numbers and proportions. Pupils' understanding of the number system and decimal place value is extended at this stage to tenths and then hundredths. This includes relating the decimal notation to division of whole number by 10 and later 100.		4NF–3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100)

• **Teaching point 6**: Numbers with tenths can be rounded to the nearest whole number by examining the value of the tenths digit.	Compare numbers with the same number of decimal places up to two decimal places Solve simple measure and money problems involving fractions and decimals to two decimal places.	They practise counting using simple fractions and decimals, both forwards and backwards. Pupils learn decimal notation and the language associated with it, including in the context of measurements. They make comparisons and order decimal amounts and quantities that are expressed to the same number of decimal places. They should be able to represent numbers with one or two decimal places in several ways, such as on number lines.		

End of term assessment

Summer Term Weeks 1 – 2

Decimals B

Y4 Summer Term Scheme of Learning.pdf

NCETM links	National Curriculum	National Curriculum non-statutory guidance	NRich Problem Solving	Ready to Progress
Composition and calculation: hundredths and thousandths | NCETM **1.24 Composition and calculation: hundredths and thousandths** Building on segment 1.23, introduce children to hundredths (and thousandths) using both the partitioning structure and ideas of place value; apply additive facts and strategies, including column algorithms, and rounding to numbers with hundredths (and thousandths). • **Teaching point 1**: When one is divided into 100 equal parts, each part is one hundredth of the whole. When one tenth of a whole is divided into ten equal parts, each part is one hundredth of the whole. • **Teaching point 2**: Hundredths can be expressed as decimal fractions; the number written '0.01' is one hundredth; one is one hundred times the size of 0.01; 0.1 is ten times the size of 0.01. • **Teaching point 3**: We can count in hundredths up to and beyond one. • **Teaching point 4**: Numbers with hundredths can be composed additively and multiplicatively. • **Teaching point 5**: Numbers with tenths and hundredths are commonly used in measurement, scales and graphing contexts. • **Teaching point 6**: Known facts and strategies, including column algorithms, can be applied to calculations for numbers with hundredths; the same approaches can be used for numbers with hundredths as are used for numbers with tenths. • **Teaching point 7**: Numbers with hundredths can be rounded to the nearest tenth by examining the value of the hundredths digit or to the nearest whole number by examining the value of the tenths digit.	Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. Recognise and write decimal equivalents of any number of tenths or hundredths Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths Round decimals with one decimal place to the nearest whole number Compare numbers with the same number of decimal places up to two decimal places Solve simple measure and money problems involving fractions and decimals to two decimal places.	Pupils should connect hundredths to tenths and place value and decimal measure Pupils are taught throughout that decimals and fractions are different ways of expressing numbers and proportions. Pupils' understanding of the number system and decimal place value is extended at this stage to tenths and then hundredths. This includes relating the decimal notation to division of whole number by 10 and later 100. They practise counting using simple fractions and decimals, both forwards and backwards. Pupils learn decimal notation and the language associated with it, including in the context of measurements. They make comparisons and order decimal amounts and quantities that are expressed to the same number of decimal places. They should be able to represent numbers with one or two decimal places in several ways, such as on number lines.		4NF–3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100)

• **Teaching point 8**: When one is divided into 1,000 equal parts, each part is one thousandth of the whole. Knowledge and strategies for numbers with tenths and hundredths can be applied to numbers with thousandths.				

Summer Term Weeks 3 – 4				
Measurement – Money Y4 Summer Term Scheme of Learning.pdf				
NCETM links	**National Curriculum**	**National Curriculum non-statutory guidance**	**NRich Problem Solving**	**Ready to Progress**
Addition and subtraction: money | NCETM **1.25 Addition and subtraction: money** Building on segments 1.23 and 1.24, introduce children to conventions for expressing monetary value and explore the equivalence of 100 p and £1; encourage children to select column algorithms or equivalent calculations where most appropriate. • **Teaching point 1**: One penny is one hundredth of a pound; conventions for expressing quantities of money are based on expressing numbers with tenths and hundredths. • **Teaching point 2**: Equivalent calculation strategies for addition can be used to efficiently add commonly-used prices. • **Teaching point 3**: The 'working forwards'/'finding the difference' strategy for subtraction is an efficient way to calculate the change due when paying in whole pounds or notes. • **Teaching point 4**: Column methods can be used to add and subtract quantities of money. • **Teaching point 5**: Finding change when purchasing several items uses the part–part–(part–)whole structure.	Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. Estimate, compare and calculate different measures, including money in pounds and pence	Pupils build on their understanding of place value and decimal notation to record metric measures, including money		4 MD–1 Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size.

Summer Term Week 5 – 7				
Measurement – Time Y4 Summer Term Scheme of Learning.pdf				
NCETM links	**National Curriculum**	**National Curriculum non-statutory guidance**	**NRich Problem Solving**	**Ready to Progress**
N/A	Read, write and convert time between analogue and digital 12- and 24-hour clocks Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. Convert between different units of measure [for example, kilometre to metre; hour to minute]			

Summer Term Weeks 8 – 9				
Geometry – Shape Y4 Summer Term Scheme of Learning.pdf				
NCETM links	**National Curriculum**	**National Curriculum non-statutory guidance**	**NRich Problem Solving**	Ready to Progress
N/A	Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes Identify acute and obtuse angles and compare and order	Pupils continue to classify shapes using geometrical properties, extending to classifying different triangles (for example, isosceles, equilateral, scalene) and quadrilaterals (for example, parallelogram, rhombus, trapezium).	Stringy Quads Counters in the middle Symmetry Challenge	4G–2 Identify regular polygons, including equilateral triangles and squares, as those in which the side-

	angles up to two right angles by size Identify lines of symmetry in 2-D shapes presented in different orientations Complete a simple symmetric figure with respect to a specific line of symmetry.	Pupils compare and order angles in preparation for using a protractor and compare lengths and angles to decide if a polygon is regular or irregular. Pupils draw symmetric patterns using a variety of media to become familiar with different orientations of lines of symmetry; and recognise line symmetry in a variety of diagrams, including where the line of symmetry does not dissect the original shape.	Nine-Pin Triangles Seeing Rhombuses Quad match Four Triangles Puzzle Cut it Out Shapes on the Playground What shape? Sorting Logic Blocks Seeing Squares Seeing Parallelograms A Cartesian puzzle	lengths are equal and the angles are equal. Find the perimeter of regular and irregular polygons. .

Summer Term Week 10				
Statistics Y4 Summer Term Scheme of Learning.pdf				
NCETM links	**National Curriculum**	**National Curriculum non-statutory guidance**	**NRich Problem Solving**	**Ready to Progress**
N/A	Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	Pupils understand and use a greater range of scales in their representations. Pupils begin to relate the graphical representation of data to recording change over time.		4NPV–4 Divide 1,000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with 2, 4, 5 and 10 equal parts.

Summer Term Weeks 11 – 12				
Geometry – Position and Direction Y4 Summer Term Scheme of Learning.pdf				
NCETM links	**National Curriculum**	**National Curriculum non-statutory guidance**	**NRich Problem Solving**	**Ready to Progress**
N/A	Describe positions on a 2-D grid as coordinates in the first quadrant Describe movements between positions as translations of a given unit to the left/right and up/down	Pupils draw a pair of axes in one quadrant, with equal scales and integer labels. They read, write and use pairs of coordinates, for example (2, 5), including using coordinate plotting ICT tools .	Let Us Reflect Coordinate Challenge Eight hidden squares	4G–1 Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant.

	Plot specified points and draw sides to complete a given polygon.		ReflectoR ! RotcelfeR	4G–3 Identify line symmetry in 2D shapes presented in different orientations. Reflect shapes in a line of symmetry and complete a symmetric figure or pattern with respect to a specified line of symmetry

End of term assessment

Resources:

White Rose - My Account - Resources

NCETM TfM Assessment Questions 01-Yr4_Front cover-Final.indd

DfE Ready to progress criteria - Mathematics guidance: key stages 1 and 2 (covers years 1 to 6)

NCETM Ready to Progress slides - Exemplification of ready-to-progress criteria | NCETM