# Year 4 Mathematics Yearly Overview

*(Some terms may be longer or shorter; some units may vary in length of time due to AFL)*

## Autumn 1

**Mental/Oral Starters** (adaptable based on AfL)

- Order and compare numbers to 1000
- Rounding to nearest 10, 100, 1000
- Using the inverse for missing number problems (addition and subtraction)
- Addition and subtraction facts for 100

Measuring, comparing and calculating lengths

| **Prior Learning** | **Prior Learning** | **Prior Learning** | **Prior Learning** |
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| • Read and write numbers up to 1000 in numerals and in words<br>• Find 1, 10 or 100 more or less than a given number<br>• Round numbers to at least 1000 to the nearest 10 or 100<br>• Identify, represent and estimate numbers using different representations (including the number line)<br>• Recognise the place value of each digit in a three-digit number (hundreds, tens, ones) | • Recall/use addition/subtraction facts for 100 (multiples of 5 and 10)<br>• Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction<br>Add and subtract numbers mentally, including: a three-digit number and ones; a three-digit number and tens; and a three-digit number and hundreds | • Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables<br>• Derive and use doubles of all numbers to 100 and corresponding halves<br>• Derive and use doubles of all multiples of 50 to 500<br>• Understand that division is the inverse of multiplication and vice versa<br>• Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods | • Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them |
| **Place Value**<br>• Identify, represent and estimate numbers using different representations *(including the number line)*<br>• Recognise the place value of each digit in a four-digit number<br>• *Partition numbers in different ways (e.g. 2.3 = 2+0.3 & 1+1.3)*<br>• Order and compare numbers beyond 1000<br>• *Read and write numbers to at least 10 000*<br>• Find *0.1, 1, 10, 100 or* 1000 more or less than a given number<br>• Round any number to the nearest 10, 100 or 1000<br>• Count in multiples of 6, 7, 9, 25 and 1000<br>• Solve number and practical problems that involve all of the above and with increasingly large positive numbers<br><br>WRH Autumn Block 1<br>NCETM Spine: 1.17 (count in 25s), 1.22 | **Addition/Subtraction**<br>• Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method)<br>• Select a mental strategy appropriate for the numbers involved in the calculation<br>• Recall & use + / - facts for 100<br>• Recall and use +/- facts for multiples of 100 totalling 1000<br>• Add and subtract mentally combinations of two- and three-digit numbers<br>• Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate<br>• Estimate; use inverse operations to check answers to a calculation<br>• Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why<br>• Solve addition and subtraction problems involving missing numbers<br>WRH Autumn Block 2NCETM Spine: 1.22 (TP 3 add sub 1s,10s,100s,1000s and TP5). Refer back to 1.20 and 1.21 for introducing written methods | **Multiplication/Division**<br>• Find the effect of multiplying a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer<br>• Recall multiplication and division facts for multiplication tables up to 12 × 12<br>• Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method)<br>•<br><br>WRH Spring Block 1<br>NCETM Spine: 2.10 (factor pairs), 2.11 (11x, 12x & efficient multiplication), 2.14, 2.15 | **Shape**<br>•<br>• Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes<br>• Identify lines of symmetry in 2-D shapes presented in different orientations |

**NCETM:** https://www.ncetm.org.uk/teaching-for-mastery/mastery-materials/primary-mastery-professional-development *(Spine1: Number, Add & Subtract, Spine 2: Multiplication and Division, Spine 3: Fractions)*

**White Rose Small Steps:** https://whiterosemaths.com/primary-sols/

## A :

**Mental/Oral Starters** (adaptable based on AfL)

- Converting between pounds and pence
- Multiplying and dividing by 10, 100, and 1000
- Rounding to the nearest 1000, 100, 10 and whole number
- Using the inverse for missing number problems (multiplication and division)
- Identifying factors and multiples up to 12 x 12

| **Prior Learning** | **Prior Learning** | **Prior Learning** |
|---|---|---|
| • Understand that finding a fraction of an amount relates to division<br>• Recognise that tenths arise from dividing objects into 10 equal parts and in dividing one-digit numbers or quantities by 10<br>• Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators<br>• Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators<br>• Recognise and show, using diagrams, equivalent fractions with small denominators | • Partition numbers in different ways (e.g. 146 = 100+ 40+6 and 146 = 130+16)<br>• Compare and order numbers with one decimal place<br>• Read and write numbers with one decimal place<br>• Count up and down in tenths<br>• Find the effect of multiplying a one- or two-digit number by 10 and 100, identify the value of the digits in the answer | • Continue to recognise and use the symbols for pounds (£) and pence (p) and understand that the decimal point separates pounds/pence<br>• Recognise that ten 10p coins equal £1 and that each coin is 1/10 of £1<br>• Add and subtract amounts of money to give change, using both £ and p in practical contexts<br>• Solve problems involving money and measures and simple problems involving passage of time |
| **Fractions**<br>• Understand that a fraction is one whole number divided by another (e.g. $\frac{3}{4}$ can be interpreted as 3 ÷ 4)<br>• Count up and down in hundredths<br>• Recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten<br>• Recognise and show, using diagrams, families of common equivalent fractions<br>• Recognise and write decimal equivalents of any number of tenths or hundredths (recap)<br>• Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ (recap)<br><br>WRH Spring Block 3<br>NCETM Spine: May need to visit 3.0 (KS1 fractions) & Year 3 for intro.<br>3.7 (equiv - TP1 & TP2),<br>3.5 (be selective - show more than one whole in fractions, count on & back past 1, add & sub) | **Decimals**<br>• Order and compare numbers with the same number of decimal places up to two decimal places<br>• Round decimals (one decimal place) to the nearest whole number<br>• Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$<br>• Understand the effect of dividing a one or two-digit number by 10 or 100. Identifying the value of the digits in the answer as ones, tenths and hundredths<br>• Recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten<br>• Recognise and write decimal equivalents of any number of tenths or hundredths<br>• Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer<br>• Convert between different units of measure [e.g. kilometre to metre] (including decimals)<br><br>WRH Spring Block 4 and Summer Block 1<br>NCETM Spine: (Revisit 2.13 for ÷ 10 and 100), 1.23 (tenths, hundredths), 1.24 (mainly TP 1 and some of TP2) | **Money**<br>• Write amounts of money using decimal notation<br>• *Recognise that one hundred 1p coins equal £1 and that each coin is $\frac{1}{100}$ of £1*<br>• Estimate and calculate different measures, including money in pounds and pence<br>• Solve problems involving money and measures<br><br>WRH Summer Block 2<br>NCETM Spine: 1.22 (TP 4 estimate money) 1.25 |

**NCETM:** https://www.ncetm.org.uk/teaching-for-mastery/mastery-materials/primary-mastery-professional-development *(Spine1: Number, Add & Subtract, Spine 2: Multiplication and Division, Spine 3: Fractions)*

**White Rose Small Steps:** https://whiterosemaths.com/primary-sols/

**Spring 1**

**Mental/Oral Starters** (adaptable based on AfL)

- Comparing and ordering fractions
- Identifying equivalent fractions
- Comparing and ordering units of time
- Reading and interpreting bar charts, pictograms, tables and other graphs
- Converting between analogue and digital time

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| **Prior learning**<br>• Measure, compare, add and subtract: lengths (m/cm/mm)<br>• Measure the perimeter of simple 2-D shapes<br>• Understand perimeter is a measure of distance around the boundary of a shape<br>• Review addition and subtraction learning from Autumn 1. | **Prior Learning**<br>• Use sorting diagrams to compare and sort objects, numbers and common 2-D and 3-D shapes and everyday objects<br>• Interpret and present data using bar charts, pictograms and tables<br>• Solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables | **Prior Learning**<br>• Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks<br>• Estimate/read time with increasing accuracy to the nearest minute<br>• Record/compare time in terms of seconds, minutes, hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon, midnight<br>• Know the number of seconds in a minute and the number of days in each month, year and leap year<br>• Compare durations of events [for example to calculate the time taken by particular events or tasks] |
| **Addition and Subtraction**<br>• Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method)<br>• Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate<br>• Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why<br><br>**Length and Perimeter**<br>• Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres<br>• Convert between different units of measure [e.g. kilometre to metre] (integers)<br><br>WRH Autumn Block 3<br>NCETM Spine: 2.16 | **Statistics**<br>• Use a variety of sorting diagrams to compare and classify numbers and geometric shapes based on their properties and sizes<br>• Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts, time graphs<br>• Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs<br><br>WRH Summer Block 4<br>NCETM Spine: N/A | **Time**<br>• Convert between different units of measure [e.g. hour to minute]<br>• Read, write and convert time between analogue and digital 12- and 24-hour clocks<br>• Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days<br><br>WRH Summer Block 3<br>NCETM Spine: N/A |

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**White Rose Small Steps:** https://whiterosemaths.com/primary-sols/

**Spring 2**

**Mental/Oral Starters** (adaptable based on AfL)

- Mental addition and subtraction
- Doubling and halving to 100 and beyond
- Using the inverse for missing number problems (multiplication and division)
- Measuring, comparing and calculating lengths
- Identifying and comparing the properties of 2D and 3D shapes

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| **Prior Learning**<br>• Read and write numbers up to 1000 in numerals and in words<br>• Find 1, 10 or 100 more or less than a given number<br>• Round numbers to at least 1000 to the nearest 10 or 100<br>• Identify, represent and estimate numbers using different representations (including the number line)<br>• Recognise the place value of each digit in a three-digit number (hundreds, tens, ones) | **Prior Learning**<br>• Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables<br>• Derive and use doubles of all numbers to 100 and corresponding halves<br>• Derive and use doubles of all multiples of 50 to 500<br>• Understand that division is the inverse of multiplication and vice versa<br>• Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods | **Prior Learning**<br>• Understand perimeter is a measure of distance around the boundary of a shape<br>• Measure, compare, add and subtract: lengths (m/cm/mm)<br>Recall multiplication and division facts for multiplication tables up to 12 × 12<br>• | **Prior Learning**<br>• Recognise angles as a property of shape or a description of a turn<br>• Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle<br>• Identify horizontal and vertical lines and pairs of perpendicular and parallel lines |
| **Place Value**<br>• Find 0.1, 1, 10, 100 or 1000 more or less than a given number (recap)<br>• Round any number to the nearest 10, 100 or 1000 (recap)<br>• Count backwards through zero to include negative numbers<br>• Order temperatures including those below 0°C<br>• Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer<br>• Describe and extend number sequences involving counting on or back in different steps, including sequences with multiplication and division steps<br>• Solve number and practical problems that involve all of the above and with increasingly large positive numbers<br><br>WRH Autumn Block 1<br>NCETM Spine: 1.17 (count in 25s), 1.22, 1.27 (negative numbers) | **Multiplication/Division**<br>• Recall multiplication and division facts for multiplication tables up to 12 × 12 (recap)<br>• Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) (recap)<br>• Use partitioning to double or halve any number, including decimals to one decimal place<br>• Use place value, known and derived facts to multiply and divide mentally, including multiplying by 0 and 1<br>• Recognise and use factor pairs and commutativity in mental calculations<br>• Use place value, known and derived facts to multiply and divide mentally, including dividing by 1<br><br>WRH Spring Block 1<br>NCETM Spine: 2.10 (factor pairs), 2.11 (11x, 12x & efficient mult), 2.14, 2.15 | **Area**<br>• Know area is a measure of surface within a given boundary<br>• Find the area of rectilinear shapes by counting squares<br><br>WRH Spring Block 2<br>NCETM Spine: 2.16 | **Shape**<br>• Complete a simple symmetric figure with respect to a specific line of symmetry<br>• *Continue to identify horizontal and vertical lines and pairs of perpendicular and parallel lines*<br>• Identify acute and obtuse angles and compare and order angles up to two right angles by size<br><br>WRH Summer Block 5<br>NCETM Spine: N/A |

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**White Rose Small Steps:** https://whiterosemaths.com/primary-sols/

**Summer 1**

**Mental/Oral Starters** (adaptable based on AfL)

- Rounding to the nearest 1000, 100, 10 and whole number
- Comparing and ordering fractions
- Finding factors and multiples of numbers to 100
- Multiplying and dividing by 10, 100 and 1000
- Using the inverse for missing number problems (multiplication and division)

**Prior Learning**

- Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables
- Derive and use doubles of all numbers to 100 and corresponding halves
- Derive and use doubles of all multiples of 50 to 500
- Understand that division is the inverse of multiplication and vice versa
- Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods

**Multiplication/Division**

- Use place value, known and derived facts to multiply and divide mentally, including multiplying together three numbers
- Multiply two-digit and three-digit numbers by a one-digit number using formal written layout
- Divide numbers up to 3 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context
- Use estimation and inverse to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy
- Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, division (including interpreting remainders), integer scaling problems and harder correspondence problems such as n objects are connected to m objects

WRH Spring Block 1
NCETM Spine: 2.10 (factor pairs), 2.11 (11x, 12x & efficient mult), 2.14, 2.15

**Prior Learning**

- Understand that finding a fraction of an amount relates to division
- Recognise that tenths arise from dividing objects into 10 equal parts and in dividing one-digit numbers or quantities by 10
- Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators
- Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators
- Recognise and show, using diagrams, equivalent fractions with small denominators

**Fractions**

- Recognise and show, using diagrams, families of common equivalent fractions (recap)
- Recognise, find and write fractions of a discrete set of objects including those with a range of numerators and denominators
- Count on and back in steps of unit fractions
- Compare and order unit fractions and fractions with the same denominators (including on a number line)
- Add and subtract fractions with the same denominator *(using diagrams)*
- 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
- Solve simple measure and money problems involving fractions and decimals to two decimal places

WRH Spring Block 3
NCETM Spine: May need to visit 3.0 (KS1 fractions) & Year 3 for intro.
3.4 (add and sub fractions) 3.7 (equiv - TP1 & TP2),
3.5 (be selective - show more than one whole in fractions, count on & back past 1, add & sub)

**Prior Learning**

- Partition numbers in different ways (e.g. 146 = 100+ 40+6 and 146 = 130+16)
- Compare and order numbers with one decimal place
- Read and write numbers with one decimal place
- Count up and down in tenths
- Find the effect of multiplying a one- or two-digit number by 10 and 100, identify the value of the digits in the answer

**Decimals**

- Derive and use addition and subtraction facts for 1 and 10 (with decimal numbers to one decimal place)
- Count up and down in hundredths
- Read and write numbers with up to two decimal places
- Identify the value of each digit to two decimal places
- *Order and* compare numbers with the same number of decimal places up to two decimal places
- Round decimals (one decimal place) to the nearest whole number
- Convert between different units of measure [e.g. kilometre to metre] (including decimals) (recap)

WRH Spring Block 4 and Summer Block 1
NCETM Spine: (Revisit 2.13 for ÷ 10 and 100), 1.23 (tenths, hundredths), 1.24 (mainly TP 1 and some of TP2)

**Summer 2**

**Mental/Oral Starters** (adaptable based on AfL)

- Interpreting coordinates on a graph
- Using correct vocabulary for position and movement
- Reading and writing numbers up to 1000
- Rounding to the nearest 1, 10, 100 and 1000
- Mental addition and subtraction

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| **Prior Learning**<br>• Read and write numbers up to 1000 in numerals and in words<br>• Find 1, 10 or 100 more or less than a given number<br>• Round numbers to at least 1000 to the nearest 10 or 100<br>• Identify, represent and estimate numbers using different representations (including the number line)<br>• Recognise the place value of each digit in a three-digit number (hundreds, tens, ones) | **Prior Learning**<br>• Partition numbers in different ways (e.g. 146 = 100+ 40+6 and 146 = 130+16)<br>• Compare and order numbers with one decimal place<br>• Read and write numbers with one decimal place<br>• Count up and down in tenths<br>• Find the effect of multiplying a one- or two-digit number by 10 and 100, identify the value of the digits in the answer | **Prior Learning**<br>• Recall/use addition/subtraction facts for 100 (multiples of 5 and 10)<br>• Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction<br>• Add and subtract numbers mentally, including: a three-digit number and ones; a three-digit number and tens; and a three-digit number and hundreds | **Prior Learning**<br>• Describe positions on a square grid labelled with letters and numbers<br>• Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn<br>• Identify horizontal and vertical lines and pairs of perpendicular and parallel lines | • |
| **Place Value**<br>• Identify, represent and estimate numbers using different representations *(including the number line)* (recap)<br>• Count backwards through zero to include negative numbers (recap)<br>• Read Roman numerals to 100 and know that over time, the numeral system changed to include the concept of zero and place value<br>• Solve number and practical problems that involve all of the above and with increasingly large positive numbers<br>WRH Autumn Block 1<br>NCETM Spine: 1.17 (count in 25s), 1.22, 1.27 (negative numbers) | **Decimals**<br>• Read and write numbers with up to two decimal places<br>• Identify the value of each digit to two decimal places<br>• Order and compare numbers with the same number of decimal places up to two decimal places<br>• Order and compare numbers with the same number of decimal places up to two decimal places (recap)<br>• Round decimals (one decimal place) to the nearest whole number<br>WRH Spring Block 4 and Summer Block 1<br>NCETM Spine: (Revisit 2.13 for ÷ 10 and 100), 1.23 (tenths, hundredths), 1.24 (mainly TP 1 and some of TP2) | **Addition/Subtraction**<br>• Add and subtract mentally combinations of two and three digit numbers and decimals to one decimal place<br>• Add and subtract numbers with up to 4 digits and decimals with one decimal place using the formal written methods of columnar addition and subtraction where appropriate<br>• Estimate; use inverse operations to check answers to a calculation<br>• Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why<br>• Solve addition and subtraction problems involving missing numbers<br>WRH Autumn Block 2<br>NCETM Spine: 1.22 (TP 3 add sub 1s,10s,100s,1000s and TP5). Refer back to 1.20 and 1.21 for introducing written methods | **Position and Direction**<br>• Describe positions on a 2-D grid as coordinates in the first quadrant<br>• Describe movements between positions as translations of a given unit to the left/right and up/down<br>• Plot specified points and draw sides to complete a given polygon<br>WRH Summer Block 6<br>NCETM Spine: 1.27 TP 6 | Consolidation (subject to AfL) |

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