



Year 5 Mathematics Yearly Overview

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

Mental/Oral Starters (based on AFL)

Suggestions: * X tables to ensure year 4 expectations are secure... *Adding 1s,10, s,100s to a number... *Number bonds to 10, 20, 100

Autumn 1	Prior Learning <ul style="list-style-type: none"> Count in 1000's Partition 4-digit numbers 1000 more or less Round to nearest 1000 	Prior Learning <ul style="list-style-type: none"> Add 1s, 10s, 100, 1000s to a number Add or subtract 4-digit numbers with exchange Estimate by rounding or near numbers <p style="color: brown; font-size: 0.9em;">Revisit: NCETM spine 1.22 (TP3 & 5) and 1.20, 1.21 for written methods</p>	Prior Learning <ul style="list-style-type: none"> Recall tables up to 12 x 12 Multiply or divide by 10, 100 Multiply or divide by 1 and 0 Factor pairs Multiply 3 numbers
	Place value <ul style="list-style-type: none"> Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit NCETM spine 1.26 Read Roman numerals to 1000 (M) and recognise years written in Roman numerals Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 Count forwards and backwards in steps of powers of 10 for any given number up to 1 000 000 Solve number problems and practical problems that involve all the above <p style="color: purple; font-size: 0.9em;">WR autumn block 1 (steps 1 -10)</p>	Addition and subtraction <ul style="list-style-type: none"> Add and subtract numbers mentally with increasingly large numbers NCETM spine 1.29 (TP3 difference) Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) Use rounding to check answers to calculations and determine, in context of a problem, levels of accuracy Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. NCETM spine 1.28 <p style="color: purple; font-size: 0.9em;">WR autumn block 2</p>	Multiplication and Division <ul style="list-style-type: none"> Multiply and divide numbers mentally drawing upon known facts. Multiply whole numbers and those involving decimals by 10, 100 and 1,000 NCETM spine 2.13, 2.19 Identify multiples and factors including factor pairs and common factor pairs. NCETM spine 2.21 Recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³) NCETM spine 2.20 Solve problems involving multiplication including using their knowledge of factors and multiples, squares and cubes NCETM spine 2.9 Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers Establish whether a number up to 100 is prime and recall prime numbers up to 19 <p style="color: purple; font-size: 0.9em;">WR autumn block 4</p>

NCETM: <https://www.ncetm.org.uk/teaching-for-mastery/mastery-materials/primary-mastery-professional-development> (Spine 1: Number, Add & Subtract, Spine 2: Multiplication and Division, Spine 3: Fractions)

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

Mental/Oral Starters (based on AFL)

Suggestions: * Count in steps of powers of 10... * multiply and divide by 10, 100... * factors, square and prime numbers

Autumn 2	<p>Prior Learning</p> <ul style="list-style-type: none"> • Inverse operations (+/-) (x/÷) • Symbols for ordering and comparing • Year 4 fractions: NCETM spine 3.1, 3.2, 3.3 & 3.4 	<p>Prior Learning</p> <ul style="list-style-type: none"> • <u>Review:</u> add and subtract numbers mentally strategies (compensation, number bonds) • <u>Review:</u> Add and subtract numbers with more than 4 digits, • Measurements for length m, cm, mm • Right angle – perpendicular lines 	<p>Prior Learning</p> <ul style="list-style-type: none"> • Types of charts (line, bar, pictograph) • Mental add/subtract strategies (eg: using number bonds...near numbers) •
	<p>Fractions (Understanding 1)</p> <ul style="list-style-type: none"> • Compare and order fractions whose denominators are all multiples of the same number, • Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths <p>NCETM spine 3.7 WR spring block 2</p>	<p>Perimeter and Area</p> <ul style="list-style-type: none"> • Measure and calculate the perimeter of composite rectilinear shapes • Calculate and compare the area of rectangles using (cm²) and (m²), and estimate the area of irregular shapes • Use all four operations to solve problems involving measure <p>NCETM spine 2.16 WR autumn block 5</p>	<p>Statistics</p> <ul style="list-style-type: none"> • Solve comparison, sum and difference problems using information presented in a line graph • Complete, read and interpret information in tables, including timetables <p>NCETM spine 1.28 & 1.29 WR spring block 3</p>

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Mental/Oral Starters (based on AFL)

Suggestions: *Ordering fractions...*Roman Numerals...*Round numbers up to 10 000

Spring 1	<p>Prior Learning</p> <ul style="list-style-type: none"> • Multiply & divide 2-D by 1-D • Multiply 3 numbers • Recall multiplication and division facts up to 12 x 12 • Divide 3D by 1D 	<p>Prior Learning</p> <ul style="list-style-type: none"> • Identify common equivalent fractions $\frac{1}{2}$, $\frac{1}{4}$ etc. • Count in fractions through 1 whole • Year 4 fractions: NCETM spine 3.1, 3.2, 3.3 & 3.4 • 	<p>Prior Learning Prior Learning</p> <ul style="list-style-type: none"> • Identify and name of 2D shapes • <u>Review</u> add and subtract numbers mentally strategies (compensation, number bonds)
	<p><u>Multiplication and Division</u> (calculation)</p> <ul style="list-style-type: none"> • Multiply and divide numbers mentally, drawing upon known facts • Multiply numbers up to 4D by 1D or 2D number using a formal method, including long multiplication for 2D numbers NCETM spine 2.14 • Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context NCETM spine 2.15 • Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign <p>WR spring block 1</p>	<p><u>Fractions</u> (Understanding 2)</p> <ul style="list-style-type: none"> • Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1 \frac{1}{5}$] NCETM spine 3.5 • Read and write decimal numbers as fractions • Solve problems involving multiplication and division including scaling by simple fractions and problems involving simple rates <p>WR spring block 2 (steps 1 – 6)</p>	<p><u>Properties of shapes</u></p> <ul style="list-style-type: none"> • Identify 3-D shapes, including cubes and other cuboids, from 2-D representations • Use the properties of rectangles to deduce related facts and find missing lengths and angles • Distinguish between regular and irregular polygons based on reasoning about equal sides and angles. <p>WR summer block 2 (steps 8 & 9)</p>

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Mental/Oral Starters (*adaptable based on AFL)

Suggestions: *Factor pairs...*Count in steps of powers of 10...*multiply 3 numbers

Spring 2	Prior Learning	Prior Learning	Prior Learning
	<ul style="list-style-type: none"> Review read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit WR autumn block 1 	<ul style="list-style-type: none"> Add 2 or more fractions with same denominators Subtract fractions from a whole Fractions of amounts Review: Add and subtract numbers with more than 4 digits, Review: Identify multiples and factors including factor pairs and common factor pairs. NCETM spine 2.21 	<ul style="list-style-type: none"> Rounding whole numbers Multiply and divide by 10, 100 Place value to 1,000,000 NCETM spine from year 4: 1.23 & 1.24
	Place Value	Fractions (calculation 1)	Decimals & Percentages (understanding)
	<ul style="list-style-type: none"> Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero Solve number problems and practical problems that involve all the above <p>WR autumn block 1 (step 11) NCETM spine 1.27</p>	<ul style="list-style-type: none"> Add and subtract fractions with the same denominator and denominators that are multiples of the same number NCETM spine 2.8 <p>WR spring block 2 (steps 7 – 15)</p>	<ul style="list-style-type: none"> Read, write, compare and order numbers with up to 3 decimal places. NCETM spine 1.23 TP3 Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents Round decimals with two decimal places to the nearest whole number and to one decimal place Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal Solve problems which require knowing percentage and decimal equivalents Solve problems involving number up to 3 decimal places <p>WR spring block 3</p>

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Mental/Oral Starters (based on AFL)

Suggestions: *Multiply and divide numbers mentally, drawing upon known facts... *Rounding decimal numbers to nearest 1/10 or whole

Summer 1	Prior Learning	Prior Learning	Prior Learning	Prior Learning
	<ul style="list-style-type: none"> Angle as amount of turn Identify acute and obtuse angles Estimate size of angles <u>Review</u> add and subtract numbers mentally strategies (compensation, inverse, number bonds) 	<ul style="list-style-type: none"> <u>Review:</u> Add and subtract fractions <u>Review:</u> Identify multiples and factors including factor pairs and common factor pairs. NCETM spine 2.21 	<ul style="list-style-type: none"> Make a whole from 2 decimals Decimal fraction equivalents Round decimals to nearest whole <u>Review:</u> Multiply numbers up to 4D by 1D or 2D and divide numbers up to 4 digits by a one-digit number using the formal written method 	<ul style="list-style-type: none"> <u>Review:</u> Multiply whole numbers and those involving decimals by 10, 100 and 1,000 <u>Review:</u> Use rounding to check answers to calculations and determine, in context of a problem, levels of accuracy
	Properties of shapes (angles)	Fractions (calculation 2)	Decimals (calculation)	Converting Units
	<ul style="list-style-type: none"> Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles Draw given angles, and measure them in degrees Identify: <ul style="list-style-type: none"> Angles at a point and one whole turn (total 360) Angles at a point on a straight line and 2 1 a turn (total 180) <p>Other multiples of 90</p> <p>WR summer block 2 (steps 1 – 7)</p>	<ul style="list-style-type: none"> Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams NCETM spine 3.6 Find fractions of amounts <p>WR spring block 2 (steps 15 – 19)</p>	<ul style="list-style-type: none"> Recognise and write decimal equivalents of any number of tenths and hundredths Find the effect of dividing a one- or two-digit number by 10 or 100 NCETM spine 2.19, 2.29 Solve problems involving decimals to two decimal places <p>WR summer block 1</p>	<ul style="list-style-type: none"> Convert between different units of metric measure [for example, km and m; cm and m; cm and mm; g and kg; Land ml] Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints Solve problems involving converting between units of time <p>NCETM spine 1.24 TP5 WR summer block 4</p>

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Mental/Oral Starters (based on AFL)

Suggestions: *Add and subtract fractions...*Convert FDP...*Add and subtract numbers mentally with increasingly large numbers

Summer 2	Prior Learning	Prior Learning	Prior Learning	Prior Learning
	<ul style="list-style-type: none"> Measure and calculate perimeter Calculate area of rectangles and squares using (cm²) and (m²) <u>Review:</u> Multiply and divide numbers mentally, drawing upon known facts 	<ul style="list-style-type: none"> X and Y axis Describe a translation 	<ul style="list-style-type: none"> Use formula for calculating area Reducing fractions to lowest form. Use inverse to find missing values <u>Review:</u> Add and subtract numbers with more than 4 digits, 	<ul style="list-style-type: none"> <u>Review:</u> Multiply numbers up to 4D by 1D or 2D number using a formal method, including long multiplication for 2D numbers Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context
	Volume	Position and Direction	Algebra (year 6 objectives)	Ratio (year 6 objectives)
	<ul style="list-style-type: none"> Estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water] Use all four operations to solve problems involving measure <p>WR summer block 5 NCETM spine 2.20</p>	<ul style="list-style-type: none"> Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed <p>NCETM spine 1.27 WR summer block 3</p>	<ul style="list-style-type: none"> use simple formulae Generate and describe linear number sequences Express missing number problems algebraically <p>NCETM spine 1.28, 1.31</p>	<ul style="list-style-type: none"> Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts Solve problems involving similar shapes where the scale factor is known or can be found Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. <p>NCETM spine 2.27</p>

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