

Waterville Primary School Progression of Skills and Vocabulary in MATHS

Year 3

KS2 National Curriculum

The principal focus of mathematics teaching in lower key stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers. At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of Year 3 pupils should:

- * Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10.
 - *Reason about the location of any three-digit number in a linear number system.
 - *Secure fluency in addition and subtraction facts that bridge 10, through practice.
 - *Apply place-value knowledge to known additive and multiplicative number facts.
 - *Add and subtract up to three-digit numbers using columnar methods.
 - *Apply known multiplication and division facts to solve contextual problems.
 - *Find unit fractions of quantities using known division facts.
 - *Add and subtract fractions with the same denominator, within 1.
 - *Draw polygons by joining marked points, and identify parallel and perpendicular sides.
- *Recognise the place value of each digit in three-digit numbers and use partitioning.
 - *Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines.
 - *Recall multiplication facts and division facts, in the 10, 5, 2, 4 and 8 times tables.
 - *Calculate compliments to 100.
 - *Understand and use the commutative property of addition.
 - *Interpret and write proper fractions to represent 1 or several parts of a whole.
 - *Reason about the location of any fraction within 1 in the linear number system.
 - *Recognise right angles as a property of shape or a description of a turn and identify angles.

TEACH – MODEL – USE MANIPULATIVES – RECORD – INVESTIGATE – MASTER - REPEAT

Year 3 Maths Skills

Number – Number and Place Value	Number – Addition and Subtraction	Number – Multiplication and Division	Number – Fractions
<p>Counting To count from 0 in multiples of 4, 8, 50 and 100.</p> <p>To find 10 or 100 more or less than a given number.</p> <p>Comparing Numbers To compare and order numbers up to 100</p> <p>Identifying, Representing and Estimating Numbers To identify, represent and estimate numbers using different representations.</p> <p>Reading and Writing Numbers To read and write numbers up to 1000 in numerals and in words.</p> <p>To tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks.</p> <p>Understanding Place Value To recognise the place value of each digit in a three-digit number (hundreds, tens, ones).</p> <p>Problem Solving To solve number problems and practical problems involving these ideas.</p>	<p>Mental Calculation To add and subtract numbers mentally, including:</p> <ul style="list-style-type: none"> * a three-digit number and ones * a three-digit number and tens * a three-digit number and hundreds <p>Written Methods To add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.</p> <p>Inverse Operations, Estimating and Checking Answers To estimate the answer to a calculation and use inverse operations to check answers.</p> <p>Problem Solving To solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.</p>	<p>Multiplication and Division Facts To count from 0 in multiples of 4, 8, 50 and 100.</p> <p>To recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.</p> <p>Mental Calculation To 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.</p> <p>Written Calculation To 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.</p> <p>Inverse Operations, Estimating and Checking Answers To estimate the answer to a calculation and use inverse operations to check answers.</p> <p>Problem Solving To solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.</p>	<p>Counting in Fractional Steps To count up and down in tenths.</p> <p>Recognising Fractions To recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.</p> <p>To recognise that tenths arise from dividing an object into 10 equal parts and in dividing one – digit numbers or quantities by 10.</p> <p>To recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.</p> <p>Comparing Fractions To compare and order unit fractions, and fractions with the same denominators.</p> <p>Equivalence To recognise and show, using diagrams, equivalent fractions with small denominators.</p> <p>Addition and Subtraction of Fractions To add and subtract fractions with the same denominator within one whole (e.g. $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$)</p> <p>Problem Solving To solve problems that involve all of the above.</p>
Vocabulary			
Ascending, descending, 10 or 100 more, 10 or 100 less, hundreds.	Column addition, column subtraction, exchange, estimate.	Exchange, mathematical statements, missing number problems, integer scaling problems, correspondence problems, derived facts.	Tenths.

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Year 3 Maths Skills

	Algebra	Measurement	Geometry – Properties of Shape	Statistics
	<p>Equations To solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.</p> <p>To solve problems, including missing number problems, involving multiplication and division, including integer scaling.</p>	<p>Comparing and Estimating To compare durations of events, for example to calculate the time taken by particular events or tasks.</p> <p>To estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight.</p> <p>Measuring and Calculating To measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).</p> <p>To measure the perimeter of simple 2-D shapes</p> <p>To add and subtract amounts of money to give change, using both £ and p in practical contexts.</p> <p>To add and subtract amounts of money to give change, using both £ and p in practical contexts</p> <p>Telling the Time To tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks.</p> <p>To estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight.</p> <p>Converting To know the number of seconds in a minute and the number of days in each month, year and leap year</p>	<p>Drawing and Constructing To draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them.</p> <p>Angles To recognise angles as a property of shape or a description of a turn.</p> <p>To 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.</p> <p>To identify horizontal and vertical lines and pairs of perpendicular and parallel lines.</p>	<p>Interpreting, Constructing and Presenting Data To interpret and present data using bar charts, pictograms and tables.</p> <p>Solving Problems To solve one-step and two-step questions [e.g. 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.</p>
	Vocabulary			
		<p>Measure and Length Millimetre mm, perimeter.</p> <p>Time Analogue clock, roman numerals, 12-hour clock, 24-hour clock, a.m./p.m., noon, midnight, leap year, digital.</p>	<p>Right-angle triangle, heptagon, octagon, polygon, properties, prism, orientations, angles, acute angle, obtuse angle, turn, right angles, half turn, three quarters of a turn, greater than right angle.</p>	<p>Table, bar chart, one-step problem, two-step problem.</p>

