



Portway Infant School - Maths progression grid

ELG's and national curriculum	The national curriculum for mathematics aims to ensure that all pupils: • become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately. • reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language • can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions. Foundation Stage Pupils should be taught to: • Have a deep understanding of number to 10, including the composition of each number. • Subitise (recognise quantities without counting) up to 5. • Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts. • Verbally count beyond 20, recognising the pattern of the counting system • Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity. • Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how q Key Stage 1 The principal focus of mathematics teaching in key stage 1 is to ensure that pupils: • develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources [for example, concrete objects and measuring tools]. • develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money. • know, by the end of year 2, the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency. • read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.
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Development Matters (non statutory) ELG – end of EYFS statutory	Nursery: 3-4 Development matters	Reception: Reception Development matters And ELG	Year 1	Year 2	Year 3 – included to support practitioner's understanding of what happens at juniors. Not for dipping into for children who have mastered year 2 objectives.
	Number - fast recognition of up to 3 objects, without having to count them individually (subitising) - recite numbers past 5 - say one number for each item in order: 1,2,3,4,5 - know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle') - Show 'finger numbers' up to 5. - Experiment with their own symbols and marks as well as numerals. - Solve real world problems with numbers to 5.	Number - Count objects, actions and sounds - Subitise - Link the number symbol (numeral) with its cardinal number value. - Count beyond ten - Compare numbers - Understand the 'one more than/one less than' relationship between consecutive numbers. - Explore the composition of numbers to 10 - Automatically recall number bonds for numbers 0-10. Numerical pattern	Number and Place Value - 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 twos, fives and tens. - Given a number, identify one more and one 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. Addition and Subtraction	Number and Place Value - Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward. - Recognise the place value of each digit in a two-digit number (tens, ones) - 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 words. - Use place value and number facts to solve problems. Addition and Subtraction	Number – addition and subtraction - add and subtract numbers mentally, including: - a three-digit number and 1s - a three-digit number and 10s - a three-digit number and 100s - add and subtract numbers with up to 3 digits, using formal written methods of columnar addition and subtraction - estimate the answer to a calculation and use inverse operations to check answers - solve problems, including missing number problems,

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	Numerical pattern - Compare quantities using language: 'more than' 'fewer than' - Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners', 'straight', 'flat', 'round'. - Understand position through words alone – for example "The bag is under the table" - Describe a familiar route - Discuss routes and locations, using words like 'in front of' and 'behind'. - Make comparisons between objects relating to size, length, weight and capacity. - Select shapes appropriately: flat surfaces for building, a triangular prism for a roof etc.	- Select, rotate and manipulate shapes in order to develop spatial reasoning skills. - Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can. - Continue, copy and create repeating patterns - Compare length, weight and capacity Number ELG - Have a deep understanding of number to 10, including the composition of each number. - Subitise (recognise quantities without counting (up to 5. - Automatically recall (without reference to rhymes, counting or other aids)	- 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 zero. - Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = __ - 9$. Number – Multiplication and Division - 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. Number- Fractions	- 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 ones -a two-digit number and tens -two two-digit numbers - Adding three one-digit numbers - Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. using number facts, place value, and more complex addition and subtraction Number – multiplication and division - recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables - 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 - solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are
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	- Combine shapes to make new ones – an arch, a bigger triangle etc. - Talk about and identifies the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs' etc.	number bonds to 5 (including subtraction facts) and some number bonds to 10, including double facts Numerical pattern ELG - Verbally count beyond 20, recognising the pattern of the counting system - Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity. - Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.	- Recognise, find and name half as one of two equal parts of an object, shape or quantity. - Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity. Measurement - 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) throughout - Measure and begin to record the following: -lengths and heights -mass/weight -capacity and volume -time (hours, minutes, seconds)	- Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. Number – Multiplication and Division - 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 (x), division (÷) and equals (=) signs. - Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. - Solve problems involving multiplication and division, using materials, arrays,	connected to m objects Number – fractions - count up and down in tenths; recognise that tenths arise from dividing an object 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 - add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$]
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			•Recognise and know the value of different denominations of coins and notes. •Sequence events in chronological order using language (for example, before and 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. Geometry –Properties of Shape •Recognise and name common 2D and 3D shapes, including: -2D shapes (for example, rectangles (including squares), circles and triangles). -3D shapes (for example, cuboids (including cubes), pyramids and spheres). Geometry – Position and Direction	repeated addition, mental methods, and multiplication and division facts, including problems in contexts. Number- Fractions •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 $\frac{1}{2}$. Measurement •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 results using >, < and =. •Recognise and use symbols for pounds (£) and pence (p); combine	• compare and order unit fractions, and fractions with the same denominators • solve problems that involve all of the above Measurement • measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) • measure the perimeter of simple 2-D shapes • add and subtract amounts of money to give change, using both £ and p in practical contexts • tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks • estimate and read time with increasing accuracy to the nearest minute; record and compare
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			•Describe position, direction and movement, including whole, half, quarter and three-quarter turns.	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. •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. Geometry –Properties of Shape •Identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line. •Identify and describe the properties of 3D shapes, including the	time in terms of seconds, minutes and hours; use vocabulary such as o'clock, am/pm, morning, afternoon, noon and midnight • know the number of seconds in a minute and the number of days in each month, year and leap year • compare durations of events [for example, to calculate the time taken by particular events or tasks] Geometry – properties of shape • draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them • recognise angles as a property of shape or a description of a turn • identify right angles, recognise that 2 right angles make a half-turn, 3 make three-
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				number of edges, vertices and faces. • Identify 2D shapes on the surface of 3D shapes, (for example, a circle on a cylinder and a triangle on a pyramid) • Compare and sort common 2D and 3D shapes and everyday objects. Geometry – Position and Direction • 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) Statistics • Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. • Ask and answer simple questions by counting	quarters of a turn and 4 a complete turn; identify whether angles are greater than or less than a right angle • identify horizontal and vertical lines and pairs of perpendicular and parallel lines Statistics • interpret and present data using bar charts, pictograms and tables • 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
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				the number of objects in each category and sorting the categories by quantity. •Ask and answer questions about totalling and comparing categorical data.	
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