Eardisley CE Primary School
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Whole School Mathematics Progression

Date	Subject Lead	Teaching Sequence in Mathematics
November 2021	**Susan Mealand**	
This document aims to give guidance on the progression of Mathematics knowledge and skills across the year groups. It can also be used to differentiate work, and expectations, appropriately for pupils working above and below age-related expectations (particularly SEND pupils and GD pupils). All pupils should also be encouraged to access mathematical problems presented in a wide range of different, complex ways, ask their own mathematical questions and follow their own lines of enquiry when exploring an open ended maths problem. Pupils use of mathematical language, fluency in the fundamentals of mathematics, reasoning mathematically following a line of enquiry and solving problems by applying their mathematical skills should be evident in their mathematics books.	In Mathematics, like all other subjects, we recognise the importance of the methods and practice of teaching (the pedagogy) thus enabling pupils to know more, understand more and remember more. In Mathematics, the following approaches will be used, and be evident in pupil discussion, observations and work in books, in order to ensure that the learning opportunities and skill development are as effective as possible and that pupils progress throughout the year and during their maths experiences in school:	- 'The Big Picture' – setting the mathematics learning that is about to take place within the chronology of pupils maths learning and skill development to date. Starting with what the children know, understand, are able to do and able to say:-. - Review most recent learning in mathematics. -Specify key vocabulary to be used and its meaning. - Specify mathematical skills to be used. - Provide opportunities for the children to work interactively - Provide opportunities for children to critically review their own work and that of others. - Individual reflection on the learning and mathematical skill. development that has taken place.

	NUMBER AND PLACE VALUE					
	Counting					
EYFS	Yr 1	Yr2	Yr3	Yr4	Yr5	Yr 6

count reliably with numbers from one to 20	count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number			count backwards through zero to include negative numbers	interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero	use negative numbers in context, and calculate intervals across zero
	count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens	count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward	count from 0 in multiples of 4, 8, 50 and 100;	count in multiples of 6, 7, 9, 25 and 1000	count forwards or backwards in steps of powers of 10 for any given number up to 1000000	
say which number is one more or one less than a given number	given a number, identify one more and one less		find 10 or 100 more or less than a given number	find 1000 more or less than a given number		
Comparing numbers						
Place numbers in order from one to 20 in order	use the language of: equal to, more than, less than (fewer), most, least	compare and order numbers from 0 up to 100; use and = signs	compare and order numbers up to 1000	order and compare numbers beyond 1000 compare numbers with the same	read, write, order and compare numbers to at least 1000000 and determine the value of each digit	read, write, order and compare numbers up to 10 000000 and determine the value of each digit (appears

				number of decimal places up to two decimal places (copied from Fractions)	(appears also in Reading and Writing Numbers)	also in Reading and Writing Numbers)
Identifying, representing and estimating numbers						
Place numbers in order from one to 20 in order	identify and represent numbers using objects and pictorial representations including the number line	identify, represent and estimate numbers using different representations, including the number line	identify, represent and estimate numbers using different representations	identify, represent and estimate numbers using different representations		
Reading and writing numbers (including Roman numerals)						
Place numbers in order from one to 20 in order from Measurement)	read and write numbers from 1 to 20 in numerals and words.	read and write numbers to at least 100 in numerals and in words	read and write numbers up to 1000 in numerals and in words tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks (copied	read, write, order and compare numbers to at least 1000000 and determine the value of each digit (appears also in Comparing Numbers) read Roman numerals to 100 (I to C) and know that over	read, write, order and compare numbers up to 10 000000 and determine the value of each digit (appears also in Understanding Place Value) read Roman numerals to 1 000 (M) and recognise years	

				time, the numeral system changed to include the concept of zero and place value.	written in Roman numerals	
Understanding place value						
		recognise the place value of each digit in a two-digit number (tens, ones)	recognise the place value of each digit in a three digit number (hundreds, tens, ones)	recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) ind the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as units, tenths and hundredths (copied from Fractions)	read, write, order and compare numbers to at least 1000000 and determine the value of each digit (appears also in Reading and Writing Numbers) recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents (copied from Fractions)	read, write, order and compare numbers up to 10 000000 and determine the value of each digit (appears also in Reading and Writing Numbers) identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places (copied from Fractions)

Rounding						
				round any number to the nearest 10, 100 or 1000 round decimals with one decimal place to the nearest whole number (copied from Fractions)	round any number up to 1000000 to the nearest 10, 100, 1000, 10 000 and 100000 round decimals with two decimal places to the nearest whole number and to one decimal place (copied from Fractions)	round any whole number to a required degree of accuracy solve problems which require answers to be rounded to specified degrees of accuracy (copied from Fractions)
Problem Solving						
		use place value and number facts to solve problems	solve number problems and practical problems involving these ideas	solve number and practical problems that involve all of the above and with increasingly large positive numbers	solve number problems and practical problems that involve all of the above	solve number and practical problems that involve all of the above

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Number and place value vocabulary						
EYFS	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6
One more One less Place Order Number Count Numbers up to twenty Number line Pictorial Answer Equals Read	Same as EYFS, plus: Forwards Backwards Numerals Words Multiples Equal to More than Less than Fewer Most Least Identify	Same as EYFS & Year 1, plus: Ones Tens Two- digit Estimate Place Value Solve Problems Greater than > Less than < Nearest ten Number facts Partition	Same as EYFS & KS1, plus: Hundreds Three-digit ten more one hundred more ten less one hundred less Roman numeral Numbers up to one thousand	Same as previous year groups, plus: Thousands Four- digit Negative number One thousand more One thousand less Decimal Decimal place Rounding	Same as previous year groups, plus: Ten thousands Hundred thousands Millions Context Steps of powers Decimal equivalents Two decimal places	Same as previous year groups, plus: Intervals across zero Three decimal places Hundredths Thousandths Ten thousandths Numbers up to ten million

Write	Represent Digit Calculate Odd Even Pattern Numbers up to one hundred	Count in steps Zero Compare Determine Value		Place holder Nearest ten Nearest hundred Nearest thousand One place Whole number Integer Tenths Hundredths	Thousandths Numbers up to one million	

Number: Addition and subtraction						
Number bonds						
	represent and use number bonds and related subtraction facts within 20	recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 M				

Mental calculations						
Using quantities and objects, add and subtract two single-digit numbers and count on or back to find the answer	add and subtract one-digit and two-digit numbers to 20, including zero read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Written Methods)	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	add and subtract numbers mentally, including: * a three-digit number and ones * a three-digit number and tens * a three-digit number and hundreds		add and subtract numbers mentally with increasingly large numbers	perform mental calculations, including with mixed operations and large numbers use their knowledge of the order of operations to carry out calculations involving the four operations
Written methods						

Using quantities and objects, add and subtract two singledigit numbers and count on or back to find the answer	read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Mental Calculation)		add and subtract numbers with up to three digits, using formal written methods of column addition and subtraction	add and subtract numbers with up to 4 digits using the formal written methods of column addition and subtraction where appropriate	add and subtract whole numbers with more than 4 digits, including using formal written methods (column addition and subtraction)	
Inverse operations, estimating and checking answers						
		recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	estimate the answer to a calculation and use inverse operations to check answers	estimate and use inverse operations to check answers to a calculation	use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy
Problem solving						
Solve problems, including doubling, halving and sharing.	solve one-step problems that involve addition and subtraction, using concrete	solve problems with addition and subtraction: * using concrete objects and	solve problems, including missing number problems, using number facts,	solve addition and subtraction two-step problems in contexts,	solve addition and subtraction multi-step problems in contexts,	solve addition and subtraction multi-step problems in contexts,

	objects and pictorial representations, and missing number problems such as 7 = ∗ - 9	pictorial representations, including those involving numbers, quantities and measures * applying their increasing knowledge of mental and written methods solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change (copied from Measurement)	place value, and more complex addition and subtraction	deciding which operations and methods to use and why	deciding which operations and methods to use and why	deciding which operations and methods to use and why Solve problems involving addition, subtraction, multiplication and division

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Addition and subtraction vocabulary						
EYFS	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6
Add Subtract Addition Subtraction Adding Subtracting Number Number line Single digit Count on Count back Answer Doubling Halving Sharing Numbers to twenty Check	Same as EYFS, plus: One step problem Concrete object Pictorial representation Missing number Problem Read Write Interpret Equals = Signs One-digit Two-digit Ones Mental Mentally	Same as EYFS & Year 1, plus: Column addition Column Subtraction Tens Order Inverse Relationship Calculation Solve problems Missing number problems Quantities Measures Formal Written method Mental method Method Operation Apply Whole number	Same as EYFS & KS1, plus: Three-digit number Hundreds Estimate Number facts	Same as previous year groups, plus: Two step problems Context Four-digit	Same as previous year groups, plus: Increasingly large numbers More than 4 digits Rounding Determine Context Multi-step problems	Same as previous year groups, plus: Estimation Mixed operations

Number: Multiplication and Division						
Multiplication facts, mental calculation and written methods						
	count in multiples of twos, fives and tens (copied from Number and Place Value)	count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward (copied from Number and Place Value) recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers	count from 0 in multiples of 4, 8, 50 and 100 (copied from Number and Place Value) recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables write and calculate mathematical	count in multiples of 6, 7, 9, 25 and 1000 (copied from Number and Place Value) recall multiplication and division facts for multiplication tables up to 12x12	count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 (copied from Number and Place Value) multiply and divide numbers mentally	perform mental calculations, including with mixed

			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 (appears also in Written Methods	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	drawing upon known facts	operations and large numbers multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication
		show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot calculate mathematical statements for multiplication	write and calculate	recognise and use factor pairs and commutativity in mental calculations (appears also in Properties of Numbers)	multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 multiply numbers up to 4 digits by a one-	associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3 /8) (copied from Fractions)

		and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs	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 (appears also in Mental Methods)	multiply two-digit and threedigit numbers by a one-digit number using formal written layout	or two-digit number using a formal written method, including long multiplication for twodigit 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 whole number remainders, fractions, or by rounding, as appropriate for the context use written division methods in cases where the answer has up to two decimal places (copied	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 divide numbers up to 4- digits by a two-digit whole number using the formal written method of short division where appropriate for the context divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret

					from Fractions (including decimals))	remainders as fractions or use rounding.

Multiples, prime, factors, square and cube numbers						
				recognise and use factor pairs and commutativity in mental calculations (repeated)	identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. know and use the vocabulary of prime numbers, prime factors and composite (non prime) numbers stablish whether a number up to 100 is prime and recall prime numbers up to 19 recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3)	identify common factors, common multiples and prime numbers use common factors to simplify fractions; use common multiples to express fractions in the same denomination (copied from Fractions) calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm 3) and cubic metres (m 3), and extending to

						other units such as mm 3 and km 3 (copied from Measures)

Order of operation						
						use their knowledge of the order of operations to carry out calculations involving the four operations
Inverse operation, estimating and checking answers						
			estimate the answer to a calculation and use inverse operations to check answers (copied from Addition and Subtraction)	estimate and use inverse operations to check answers to a calculation (copied from Addition and Subtraction)	use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy	
Problem solving						
	solve one-step problems involving multiplication and division, by calculating the	solve problems involving multiplication and division, using materials, arrays, repeated	solve problems, including missing number problems, involving multiplication	solve problems involving multiplying and adding, including using the distributive	solve problems involving multiplication and division including using their knowledge	solve problems involving addition, subtraction, multiplication and division

	answer using concrete objects, pictorial representations and arrays with the support of the teacher	addition, mental methods, and multiplication and division facts, including problems in contexts	and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects	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	of factors and multiples, squares and cubes solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	solve problems involving similar shapes where the scale factor is known or can be found (copied from Ratio and Proportion)

Multiplication and division vocabulary						
EYFS	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6
	Multiples Twos Fives Tens Number Multiply Divide Multiplication Division One step problem Answer Concrete	Same as EYFS & Year 1, plus: Multiplication facts Division facts Multiplication tables Odd numbers Even numbers Share Equally Repeated	Same as EYFS & KS1, plus: Missing number problem Estimate Inverse Formal written method Mathematical statement Recall Integer	Same as previous year groups, plus: Derived facts Factors Factor pairs Scaling problems Three-digit	Same as previous year groups, plus: Decimals Four-digit Long multiplication Short division Remainders Context Common factors Common	Same as previous year groups, plus: Scale factor Long division Whole number remainders Fractions Rounding Mixed operations

	object Pictorial representation Arrays Count Equals Write	division Calculate	Two- digit One- digit		multiples Prime numbers Prime factors Composite numbers Square number Cube number Notation Squares Cubes	

Fractions						
Counting, recognising, comparing (fractions, decimals), equivalence (decimals, percentages), rounding.						
	recognise, find and name a half as one of two equal parts of an object, shape or quantity	Pupils should count in fractions up to 10, starting from any number and using the1/2 and 2/4 equivalence on the number line (Non Statutory Guidance)	count up and down in tenths recognise, find and write fractions of a discrete set of	count up and down in hundredths recognise that hundredths arise when	recognise and use thousandths and relate them to tenths,	

	recognise, find and name a quarter as one of four equal parts of an object, shape or quantity	recognise, find, name and write fractions 1 / 3 , 1 / 4 , 2 / 4 and 3 / 4 of a length, shape, set of objects or quantity	objects: unit fractions and non-unit fractions with small denominators recognise that tenths arise from dividing an object into 10 equal parts and in dividing one – digit numbers or quantities by 10. recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators compare and order unit fractions, and fractions with the same denominators	dividing an object by one hundred and dividing tenths by ten compare numbers with the same number of decimal places up to two decimal places	hundredths and decimal equivalents (appears also in equivalence) compare and order fractions whose denominators are all multiples of the same number read, write, order and compare numbers with up to three decimal places	compare and order fractions, including fractions >1 identify the value of each digit in numbers given to three decimal places solve problems which require answers to be rounded to specified degrees of accuracy

		write simple fractions e.g. 1 / 2 of 6 = 3 and recognise the equivalence of 2 / 4 and 1 / 2 .	recognise and show, using diagrams, equivalent fractions with small denominators	round decimals with one decimal place to the nearest whole number recognise and show, using diagrams, families of common equivalent fractions recognise and write decimal equivalents of any number of tenths or hundredths	round decimals with two decimal places to the nearest whole number and to one decimal place identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths read and write decimal numbers as fractions (e.g. 0.71 = 71 / 100) recognise and use thousandths and relate them to tenths, hundredths and	use common factors to simplify fractions; use common multiples to express fractions in the same denomination associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3 / 8) recall and use equivalences between simple fractions, decimals and percentages, including in

				recognise and write decimal equivalents to 1 / 4 ; 1 / 2 ; 3 / 4	decimal equivalents decimal equivalents recognise and write decimal equivalents to 1 / 4 ; 1 / 2 ; 3 / 4 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 as a decimal fraction	different contexts.
Addition, subtraction, multiplication and division of fractions						
			add and subtract fractions with the same denominator within one whole (e.g. 5 / 7 + 1 / 7 = 6 / 7)	add and subtract fractions with the same denominator	add and subtract fractions with the same denominator and multiples of the same number	add and subtract fractions with different denominators and mixed numbers, using the concept of

					recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number (e.g. 2 / 5 + 4 / 5 = 6 / 5 = 1 1 / 5) multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	equivalent fractions multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. 1 / 4 × 1 / 2 = 1 / 8) multiply one-digit numbers with up to two decimal places by whole numbers divide proper fractions by whole numbers (e.g. 1 / 3 ÷ 2 = 1 / 6) multiply simple pairs of proper fractions, writing

						the answer in its simplest form (e.g. 1 / 4 × 1 / 2 = 1 / 8) multiply one-digit numbers with up to two decimal places by whole numbers divide proper fractions by whole numbers (e.g. 1 / 3 ÷ 2 = 1 / 6)
Multiplication and division of decimals						
				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		multiply one-digit numbers with up to two decimal places by whole numbers multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places identify the value of each

						digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3 /8) use written division methods in cases where the answer has up to two decimal places
Problem Solving						
			solve problems that involve all of the above	solve problems involving increasingly harder fractions	solve problems involving numbers up to	

				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.	three decimal places solve problems which require knowing percentage and decimal equivalents of 1 / 2 , 1 / 4 , 1 / 5 , 2 / 5 , 4 / 5 and those with a denominator of a multiple of 10 or 25.	

Fractions – including decimals and percentages vocabulary						
EYFS	Yr 1	Yr2	Yr3	Yr4	Yr5	Yr6
	Fraction Half Equal parts One whole Object Shape Quantity Quarter	Same as EYFS & Year 1, plus: Simple fractions Equivalent equivalence Count	Same as EYFS & KS1, plus: Tenths Unit fractions Non- unit fractions Numerator Denominator Compare Order Add Subtract Solve problems	Same as previous year groups, plus: Hundredths Decimal Decimal place One decimal place Two decimal places Round decimals Whole number Common equivalent fractions Decimal equivalents Dividing Ones Tenths Hundredths Simple measure Money problems	Same as previous year groups, plus: Thousandths Multiples Three decimal places Per cent Number of parts per hundred Percentages Decimal fraction Mixed numbers Improper fraction Proper fraction Convert Mathematical statements Multiply Percentage and decimal equivalents	Same as previous year groups, plus: Common factors Common multiples Decimal fraction equivalents Simplest form

Measurement						
Comparing, estimating, measuring and calculating						
EYFS	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6
Children use everyday language to talk about size, weight, capacity, to compare quantities and objects and to solve problem	compare, describe and solve practical problems for: * lengths and heights [e.g. long/short, longer/shorter, tall/short, double/half] * mass/weight [e.g. heavy/light, heavier than, lighter than] * capacity and volume [e.g. full/empty, more than, less than, half, half full,	compare and order lengths, mass, volume/capacity and record the results using >, < and =	compare durations of events, for	estimate, compare and calculate different measures, including money in pounds and pence (also included in Measuring)	calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm 2) and square metres (m 2) and estimate the area of irregular shapes (also included in measuring) estimate volume (e.g. using 1 cm 3 blocks to build	calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm 3) and cubic metres (m 3), and extending to other units such as mm 3 and km 3

	quarter] * time [e.g. quicker, slower, earlier, later sequence events in chronological order using language [e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]	compare and sequence intervals of time	example to calculate the time taken by particular events or tasks 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 (appears also in Telling the Time)		cubes and cuboids) and capacity (e.g. using water)	
Children use everyday language to talk about size, weight, capacity, to compare quantities and objects and to solve problems		choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g);	measure, compare, add and subtract:	estimate, compare and calculate different measures, including money in pounds and pence (appears	use all four operations to solve problems involving measure (e.g. length, mass,	solve problems involving the calculation and conversion of units of measure, using decimal notation

Children use everyday language to talk about money to compare quantities and objects and to solve problems	measure and begin to record the following: lengths and heights mass/weight * capacity and volume * time (hours, minutes, seconds) recognise and know the value of different denominations of coins and notes	temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value find different combinations of coins that equal the same amounts of money	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	also in Comparing) measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres	volume, money) using decimal notation including scaling measure and calculate the perimeter of composite rectilinear shapes in centimetres and	up to three decimal places where appropriate (appears also in Converting) recognise that shapes with the same areas can have different perimeters and vice versa

		solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change		find the area of rectilinear shapes by counting squares	calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm 2) and square metres (m 2) and estimate the area of irregular shapes recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) (copied from Multiplication and Division	calculate the area of parallelograms and triangles calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm 3) and cubic metres (m 3), and extending to other units [e.g. mm 3 and km 3]. recognise when it is possible to use formulae for area and volume of shapes
Telling the Time						
Children use everyday language to talk	tell the time to the hour and half past the	tell and write the time to five minutes,	tell and write the time from an analogue clock,	read, write and convert time between		

about time to solve problems.	hour and draw the hands on a clock face to show these times. recognise and use language relating to dates, including days of the week, weeks, months and years	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. (appears also in Converting)	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 time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight (appears also in Comparing and Estimating	analogue and digital 12 and 24- hour clocks (appears also in Converting) solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days	Solve problems involving converting between units of time	
Converting						
		Know the number of minutes in an hour and the number of hours in a day.	know the number of seconds in a minute and the number of days in each month,	Convert between different units of measure (e.g. kilometre to	convert between different units of metric measure (e.g. kilometre and metre; centimetre and	use, read, write and convert between standard units, converting measurements

			year and leap year	metre; hour to minute) read, write and convert time between analogue and digital 12 and 24- hour clocks (appears also in Converting) solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days (appears also in	metre; centimetre and millimetre; gram and kilogram; litre and millilitre) solve problems involving converting between units of time understand and use equivalences between metric units and common imperial units such as inches, pounds and pints	of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate (appears also in Measuring and calculating Convert between miles and kilometres

				Telling the Time)		
Measurement Vocabulary						
EYFS	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6
Measure Measurement Size Weight Capacity Compare Solve Problems Object Time	Same as EYFS, plus: Length Height Long Short Longer Shorter Tall Double Half Mass Heavy Light Heavier than Lighter than Volume Full Empty More than Less than Half Half full Quarter Quicker Slower Earlier Later	Same as EYFS & Year 1, plus: Greater than > Less than < Equals = Intervals Standard units Estimate Direction Temperature Unit Scales Rulers Thermometers Measuring vessels Metres Centimetres Kilograms Grams Degrees Celsius Litres Millilitres Symbols Money Pounds (£) Pence (p)	Same as EYFS & KS1, plus: Duration Time taken Nearest minute Record Seconds a.m. p.m. noon midnight kilometre add subtract millimetres perimeter simple 2-D shapes analogue clock roman numerals 12-hour 24-hour Leap year	Same as previous year groups, plus: Estimate Rectilinear figure Area Rectilinear shapes Convert	Same as previous year groups, plus: Square centimetres (cm2) Square metres (m2) Irregular shapes Volume (cm3) Cubes Cuboids Square numbers Cube numbers Metric measure Metric units Imperial units Inches Pounds Pints	Same as previous year groups, plus: Decimal notation Cubic centimetres (cm3) Cubic metres (m3) Cubic millimetre (mm3) Cubic kilometre (Km3) Decimal places formulae Miles

	Sequence events Chronological order Before After Next First Today Yesterday Tomorrow Morning Afternoon Evening Record Hours Minutes Hour Half past O clock Hands Clock face Seconds Coins Notes Dates Days Weeks Months Years	Different combinations Change Five past Ten past Quarter past Twenty past Twenty-five past Half past Twenty-five to Twenty to Quarter to Ten to Five to				

Geometry

Position, direction, movement and pattern						
Children use everyday language to talk about position, distance.	describe position, direction and movement, including half, quarter and three-quarter turns	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)		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 plot specified points and draw sides to complete a given polygon	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	describe positions on the full coordinate grid (all four quadrants) draw and translate simple shapes on the coordinate plane, and reflect them in the axes.
Recognise, create and describe patterns.		order and arrange combinations of mathematical objects in patterns and sequences				

Geometry: position and direction vocabulary						
EYFS	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6
Position Distance Direction Move Movement Patterns	Same as EYFS, plus: Half turn Quarter turn Three-quarter turn Left Right Up Down	Same as EYFS & Year 1, plus: Rotation Right angle Clockwise Anti-clockwise Order Arrange	Same as EYFS & KS1	Same as previous year groups, plus: Co-ordinates Quadrant Grid Translate Translation	Same as previous year groups, plus: Reflection	Same as previous year groups, plus: Four quadrants

		Sequence		Axis X- axis Y-axis Spaces Unit Plot Point Polygon		

Statistics						
Interpreting, constructing and presenting data, and solving problems						
EYFS	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6
		interpret and construct simple pictograms, tally charts, block diagrams and simple tables ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity ask and answer questions about totalling and comparing categorical data	interpret and present data using bar charts, pictograms and tables solve one-step and twostep questions [e.g. 'How many more?' and 'How many fewer?'] using	interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs solve comparison, sum and difference problems using	complete, read and interpret information in tables, including timetables solve comparison, sum and difference problems using information presented in a line graph	interpret and construct pie charts and line graphs and use these to solve problems calculate and interpret the mean as an average

			information presented in scaled bar charts and pictograms and tables.	information presented in bar charts, pictograms, tables and other graphs		

Statistics vocabulary						
EYFS	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6
		Interpret Construct Pictogram Tally chart	Same as KS1, plus: Present Presented Graph Statistics	Same as previous year groups, plus: Time graphs	Same as previous year groups, plus: Timetables Line graph	Same as previous year groups, plus: Pie chart Calculate

		Block diagrams Horizontal Vertical x- axis y-axis key title chart title Simple tables Ask Answer Questions Counting Objects Category Sort Quantity Total Compare Data	Bar charts Tables Solve One- step questions Two- step questions Information	Comparison Problems		Mean Average

Algebra
Equations, Formulae and Sequences

EYFS	YR1	Yr2	Yr3	Yr4	Yr5	Yr6
	Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ∗ - 9 (copied from Addition and Subtraction)	recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems. (copied from Addition and Subtraction)	Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. (copied from Addition and Subtraction) solve problems, including missing number problems, involving multiplication and division, including integer scaling (copied from Multiplication and Division)		use the properties of rectangles to deduce related facts and find missing lengths and angles (copied from Geometry: Properties of Shapes)	Express missing number problems algebraically
		recall and use addition and subtraction facts to 20 fluently,				find pairs of numbers that satisfy number sentences

	represent and use number bonds and related subtraction facts within 20 (copied from Addition and Subtraction) sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening (copied	and derive and use related facts up to 100 (copied from Addition and Subtraction) compare and sequence intervals of time (copied from Measurement) order and arrange combinations of mathematical objects in patterns (copied from Geometry:		Perimeter can be expressed algebraically as 2(a + b) where a and b are the dimensions in the same unit.		involving two unknowns enumerate all possibilities of combinations of two variables use simple formulae recognise when it is possible to use formulae for area and volume of shapes generate and describe linear number sequences

	from Measurement)	position and direction)				

Algebra vocabulary						
EYFS	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6
	Solve One-step problem Missing number Check Calculate problem Sequence Chronological	Inverse Relationship Compare Order Arrange Pattern		Perimeter Algebra Algebraically	Properties Rectangles Deduce Related facts Missing lengths Missing angles	Missing number Problem Pairs Number sentence Variables Combination Possibility Enumerate Equation Formulae Generate Linear number sequence

Ratio and proportion						
Statements only appear in Yr 6 but learning should be linked to prior learning of fractions, multiplication and division						
EYFS	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6
						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 the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison 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

Ratio and proportion						
EYFS	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6
						Ratio Proportion Size Quantity Missing value Integer Multiplication Division Multiply Divide Solve Problem Calculate Percentage Comparison Unequal sharing Grouping Fractions Multiples