

Pyrford C of E School Maths Progression Map



	Nursery	Reception	YEAR 1	Year 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
				Flue	ncy			
Additive factual fluency	Fluency in EYFS is seen through songs and rhymes and games which require the children to remember and recall the mathematical language that has been used.	Fluency in EYFS is seen through songs and rhymes and games which require the children to remember and recall the mathematical language that has been used.	Addition and subtraction within 10.	Addition and subtraction across 10.	Secure and maintain fluency in addition and subtraction within and across 10, through continued practice			

Multiplicative			Recall the 10 and 5	Recall the 3, 6 and 9
factual fluency			multiplication tables,	multiplication tables,
			and corresponding	and corresponding
			division facts.	division facts.
			Recall the 2, 4 and 8	Recall the 7-
			multiplication tables,	multiplication table,
			and corresponding	and corresponding
			division facts.	division facts.
				Decell the 11 and 12
				Recall the 11 and 12
				and corresponding
				division facts

on facts, through nued practice.

			Place Value				
Counting	 Children are able to count within opportunities in the school day that lends itself to this such as using the language 'one', 'two', 'three', 'lots',' fewer', 'hundreds', 'how many?' and 'count' objects. Count in everyday contexts (sometimes skipping numbers – 1,2,3,4,5) Count and recognise numerals Take part in finger rhymes with numbers. Develop counting-like behaviour such as making sounds, pointing or saying some numbers in sequence. Recite numbers past 5. 	 Count objects, actions and sounds (0-10). Develop the key skills of counting objects including saying the numbers in order and matching one number name to each item. Say how many there are after counting – for example, "6, 7, 8. There are 8 balls" – to help children appreciate that the last number of the count indicates the total number of the group. This is the cardinal counting principle. Count out a smaller number from a larger group Build counting into everyday routines such as register time, tidying up, lining up or counting out pieces of fruit at snack time. Sing counting songs and number rhymes and read stories that involve counting. Play games which involve counting. 	 Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. Count number to 100 in numerals; count in multiples of 2, 5 and 10. 	 Count in steps of 2, 3 and 5 from 0 and in tens from any number forwards and backwards. 	 Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number 	 Count in multiples of 6, 7, 9, 25 and 1000 Count backwards through zero to include negative numbers 	



	 Develop fast recognition of up to 3 objects, without having to count them individually (subitising). To know the last number reached when counting a small set of objects tells you how many there are in total (cardinal principle). Link numerals and amount up to 5. 	 Count beyond 10. Explore the composition of numbers to 10. Recognise when there is 0 of something. 				
Represent	 Show fingers to represent 5. Say one number for each item. Experiment with their own symbols and marks as well as numbers. 	 Children can subitise; this can be seen by showing a number of fingers 'all at once', without counting. Put objects into five frames and then ten frames to begin to familiarise themselves with the tens structure of the number system. Identify representations of 0. Find different ways to make number 1-10. Recognise when an amount is the same. Use mark making to 	 Identify and represent numbers using objects and pictorial representations Read and write numbers to 100 in numerals Read and write numbers from 1 to 20 in numerals and words 	 Read and write numbers to at least 100 in numerals and words Identify, represent and estimate numbers using different representations, including the number line 	 Identify, represent and estimate numbers using different representation Read and write numbers up to 1000 in numbers and words 	 Identify, represent and estimate numbers using different representation Read roman numerals to 100 and know that over time the numeral system changed to include the concept of zer and place valu

•	Read, write, (order and compare) numbers to at least 1,000,000 and determine the value of each digit Read roman number to 1000 and recognise years written in Roman numerals	Read, write (order and compare) numbers up to 10,000,000 and determine the value of each digit.

 represent numbers up to 10. Link the number symbol (numeral) with its cardinal number value. Compare numbers up to 10 using the language 'more than', 'less than', 'fewer', 'the same as', 'equal to'. Understand the 'one more than/one less than' relationship between consecutive numbers. Make predictions about what the outcome will be in stories, rhymes and songs if one is added, or if one is taken away. Compare sets of items and say whether they have more, fewer or the same number of items as another set. Compare items using one to one correspondence by counting. Explore links between the one more and one less pattern. Recognise the attern and and 	Given a number, identify one more and one less	 Recognise the place value of each digit in a 2-digit number Compare and order numbers from 0 up to 100; use <,> and = 	 Recognise the place value of each digit in a 3-digit number Compare and order numbers up to 1000 	 Find 1000 motor less than a given number Recognise the place value of each digit in a 4-digit number Order and compare numbers beyond 1000
pattern.Recognise the structure of odd				

 Read, write, order and compare number to at least 1,000,000 and determine the value of each digit 	 Read, write, order and compare number to at least 10,000,000 and determine the value of each digit

		and even numbers				
Problems and rounding	 Explore every day mathematical problems with numbers up to 5. 	 Say how many there might be before you count to give a purpose to counting Solve problems and find different possibilities. Talk about how l've solved a problem. 		Use place value and number facts to solve problems	 Sole number problems and practical problems involving these ideas 	 Round any number to the nearest 10, 100, 1000 Solve number and practical problems that involve all of the above and with increasingly large positive numbers
			ŀ	Addition and Sub	otraction	
Recall, represent and use	 React to changes of amounts in a group of up to 3 items. 	 Automatically recall number bonds for numbers 0–5 and some to 10. 	read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs • 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 show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot inverse relationship between addition and subtraction and use this to check calculations and solve missing number 	Estimate the answer to a calculation and use the inverse operations to check answers.	 estimate and use inverse operations to check answers to a calculation

- Interpret negative numbers in context
- Round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000
- Solve number problems and practical problems that involve all of the above

- Round any whole number to a required degree of accuracy
- Use negative numbers in context and calculate intervals across zero
- Solve number and practical problems that involve all of the above

use rounding to check answers to calculations and determine, in the context of a problem,

levels of accuracy

•

•

Calculations	 Explore number problems involving 'how many altogether?' 	 Combine two groups to calculate how many are altogether. 	• add and subtract one- digit and two-digit numbers to 20, including zero	 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 	 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 with up to three digits, using formal written methods of columnar addition and subtraction 	• add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate
Solve Problems			solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 =$ $\Box - 9$	solve problems with addition and subtraction: Production objects and pictorial representations, including those involving numbers, quantities and measures Production increasing knowledge of mental and written methods	solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction	 solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why

Multiplication and Division

 add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) 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
solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	 solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

Recall, represent and use	 Recognise that a pair is 2. Arrange small quantities into pairs and recognise when one is left over. 	recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers • show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot	recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables	recall multiplication and division facts for multiplication tables up to 12 × 12 • 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 • recognise and use factor pairs and commutativity in mental calculations
Calculations	 Make doubles Sort doubles and non- doubles Arrange small quantities into equal groups Share a small quantity equally Recognise that some quantities can be shared equally and some can't. 	calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (+) and	 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 	multiply two-digit and three-digit numbers by a one-digit number using formal written

• identify multiples and	 identify common
factors, including	factors, common
finding all factor pairs	multiples and prime
of a number, and	numbers
common factors of	 use estimation to
two numbers	check answers to
 know and use the 	calculations and
vocabulary of prime	determine, in the
numbers, prime	context of a problem,
factors and	an appropriate degree
composite (non-	of accuracy.
prime) numbers • establish 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)	
multiply numbers up	multiply multi-digit
multiply numbers up to 4 digits by a one-	multiply multi-digit numbers up to 4
multiply numbers up to 4 digits by a one- or two-digit number	multiply multi-digit numbers up to 4 digits by a two-digit
multiply numbers up to 4 digits by a one- or two-digit number using a formal written	multiply multi-digit numbers up to 4 digits by a two-digit whole number using
multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including	multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written
multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for	multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long
multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers	multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication
 multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers multiply and divide 	multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication • divide numbers up to
 multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers multiply and divide numbers mentally 	multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication • divide numbers up to 4 digits by a two-digit
 multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers multiply and divide numbers mentally drawing upon known 	multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication • divide numbers up to 4 digits by a two-digit whole number using
 multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers multiply and divide numbers mentally drawing upon known facts 	multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication • divide numbers up to 4 digits by a two-digit whole number using the formal written
 multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers multiply and divide numbers mentally drawing upon known facts divide numbers up to 	multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication • divide numbers up to 4 digits by a two-digit whole number using the formal written method of long
 multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers multiply and divide numbers mentally drawing upon known facts divide numbers up to 4 digits by a one-digit 	 multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication divide numbers up to 4 digits by a two-digit whole number using the formal written method of long the formal written method of long division, and interpret
 multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers multiply and divide numbers mentally drawing upon known facts divide numbers up to 4 digits by a one-digit number using the 	 multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole
 multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers multiply and divide numbers mentally drawing upon known facts divide numbers up to 4 digits by a one-digit number using the formal written 	 multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders,
 multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers multiply and divide numbers mentally drawing upon known facts divide numbers up to 4 digits by a one-digit number using the formal written method of short 	 multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by
 multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers multiply and divide numbers mentally drawing upon known facts divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret 	 multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as
 multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers multiply and divide numbers mentally drawing upon known facts divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders 	multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication • divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the
 multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers multiply and divide numbers mentally drawing upon known facts 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 	multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication • divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context
 multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers multiply and divide numbers mentally drawing upon known facts 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 	multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication • divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context • divide numbers up to
 multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers multiply and divide numbers mentally drawing upon known facts 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 multiply and divide 	multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication • divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context • divide numbers up to 4 digits by a two-digit
 multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers multiply and divide numbers mentally drawing upon known facts 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 multiply and divide whole numbers and these is real-line 	multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication • divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context • divide numbers up to 4 digits by a two-digit number using the
 multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers multiply and divide numbers mentally drawing upon known facts 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 multiply and divide whole numbers and those involving 	multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication • divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context • divide numbers up to 4 digits by a two-digit number using the formal written

			equais (=) signs	written methods	layout
Solve		solve one-step problems involving	involving	solve problems, including missing	• solve problems
		multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher	multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects	and adding, including using the distributive 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

decimals by 10, 100 and 1000	division where appropriate, interpreting remainders according to the context • perform mental calculations, including with mixed operations and large numbers
solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	solve problems involving addition, subtraction, multiplication and division

Combined operations				
		Fractions		
Recognise and write	recognise, find and name a half as one two equal parts of a object, shape or quantity • recognise, find and name a quarter as one of four equal parts of an object, shape or quantity	e of an $\frac{1}{3} \frac{1}{4} \frac{2}{4} \text{ and } \frac{3}{4} \text{ of } a$ length, shape, set of , , objects or quantity	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 with small denominators with small denominators	count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.
Compare		Recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$	recognise and show, using diagrams, equivalent fractions with small denominators • compare and order	recognise and show, using diagrams, families of common

solve problems

involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign

• use their knowledge

of the order of operations to carry out calculations involving the four operations

identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for $+\frac{4}{5}=\frac{6}{5}=$ example, $\frac{2}{5}$ <u>1</u> 5 1]

compare and order fractions whose denominators are all multiples of the same number use common factors to simplify fractions; use common multiples to express fractions in the same denomination

					unit fractions, and fractions with the same denominators	equivalent fractions
Calculations				• write simple fractions for example, $\frac{1}{2}$ of 6 = 3	add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$]	add and subtract fractions with the same denominator
Solve problems					solve problems that involve all of the above	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
Decimals						
Recognise and write						recognise and write decimal equivalents of any number of tenths or hundredths recognise and write decimal equivalents

	 compare and order
	fractions, including
	fractions > 1
	add and subtract
	fractions with
	different
	denominators and
	mixed numbers, using
	the concept of
add and subtract	equivalent fractions
fractions with the	multiply simple pairs
same denominator	of proper fractions,
and denominators	writing the answer in
that are multiples of	its simplest form [for
the same number	example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{2}$]
 multiply proper 	divide proper
fractions and mixed	fractions by whole
numbers by whole	numbers [for
numbers, supported	example $\frac{1}{2} \cdot 2 = \frac{1}{2}$
by materials and	$3 \div 2 = 6$
diagrams	

read and write decimal numbers as fractions [for example, $0.71 = \frac{71}{100}$] • recognise and use

thousandths and relate them to tenths, hundredths and identify the value of each digit in numbers given to three decimal

			$to \frac{1}{4}, \frac{1}{2}, \frac{3}{4}$
Compare			round decimals with one decimal place to the nearest whole number compare numbers with the same number of decimal places up to two decimal places
Calculations and problems			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
Fractions, decimals and percentages			solve simple measure and money problem involving fractions and decimals to two

decimal equivalents	places
round decimals with two decimal places to the nearest whole number and to one decimal place • read, write, order and compare numbers with up to three decimal places	
solve problems involving number up to three decimal places	 multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places multiply one-digit numbers with up to two decimal places by whole numbers use written division methods in cases where the answer has up to two decimal places solve problems which require answers to be rounded to specified degrees of accuracy
recognise the per	associate a fraction
cent symbol (%) and	with division and
understand that per	calculate decimal
cent relates to	fraction equivalents
'number of parts per	[for example, 0.375]
hundred', and write	for a simple traction
percentages as a	• recall and use
denominator 100, and	equivalences between

				decimal places
		Ratio and Propo	rtion	

as a decimal solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25 simple fractions, decimals and percentages, including in different contexts

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

Algebra Please note – although algebraic notation is not introduced until Year 6, algebraic thinking starts much earlier						

Measurement

Using measures	 Describe and explore language such as long, tall, short, big, little, heavy, light. This is taught through traditional. Compare sizes, weights etc using gestures and language such as 	compare, describe and solve practical problems for: [J][engths and heights [for example, long/short, longer/shorter, tall/short, double/half] [J][mass/weight [for example, heavy/light, heavier than, lighter than] [J][capacity and volume [for example,	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	measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity	Convert between different units of measure [for example, kilometre to metre; hour to minute] • estimate, compare and calculate
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multiples.

use simple formulae •

- generate and describe linear number sequences
- express missing
 number problems
 algebraically
- find pairs of numbers
 that satisfy an
 equation with two
- unknowns • enumerate possibilities of combinations of two variables.

convert between

- different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) • understand and use
- approximate equivalences between metric units and common imperial units such as inches,
- solve problems involving the calculation and conversion of units of measure, using
 - decimal notation up to three decimal
- places where
- appropriate
- use, read, write and convert between standard units, converting measurements of length, mass, volume

	bigger, little, smaller, high, low, tall, heavy.		full/empty, more than, less than, half, half full, quarter] ??Time [for example, quicker, slower, earlier, later] • measure and begin to record the following: ???lengths and heights ???mass/weight ???capacity and volume ???time (hours, minutes, seconds)	lengths, mass, volume/capacity and record the results using >, < and =	(l/ml)	different measures
Money	 Exploring the introductory concept of money through role play. 		recognise and know the value of different denominations of coins and notes	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 • solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change	add and subtract amounts of money to give change, using both £ and p in practical contexts	estimate, compare and calculate different measures, including money in pounds and pence
Time	 Begin to describe a sequence of events, real or fictional using language such as 'first' 	 Name the days of the week and discuss the events that happen in a week. Talk about day and night. 	 sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon 	 compare and sequence intervals of time tell and write the time to five minutes, including quarter past/to the hour and 	tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12- hour and 24-hour clocks	read, write and convert time between analogue and digital 12- and 24-hour clocks • solve problems involving converting

pounds and pints	and time from a
• use all four	smaller unit of
operations to solve	measure to a larger
problems involving	unit, and vice versa,
measure [for	using decimal
example, length,	notation to up to
mass, volume,	three decimal places
money] using decimal	 convert between
notation, including	miles and kilometres
scaling	
use all four	
operations to solve	
problems involving	
measure [for	
example, money]	
	use, read, write and
	convert between
	standard units,
	converting
	measurements of
solve problems	time from a smaller
involving converting	unit of measure to a

	and 'then', 'soon', 'after'.		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	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	 estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., 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] 	from hours to minutes; minutes to seconds; years to months; weeks to days
Perimeter, area and volume	 Explore comparisons between objects relating to size, length, capacity and weight; this can be seen through role playa and continuous provision 	 Compare length, weight and capacity using language such as 'than'. Make comparisons between objects using language such as heavy, heaviest, light or lightest. Recognise when a container is full, nearly full, half full, nearly empty and empty. Use mathematical language to describe length and height. 			measure the perimeter of simple 2-D shapes	measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres • find the area of rectilinear shapes by counting squares

between units of time	larger unit, and vice versa
	recognise that shapes
measure and	with the same areas
nerimeter of	nerimeters and vice
composite rectilinear	versa
shapes in centimetres	 recognise when it is
and metres	possible to use
 calculate and 	formulae for area and
compare the area of	volume of shapes
rectangles (including	calculate the area of
squares), and	parallelograms and
including using	 triangles calculate. estimate
standard units, square	and compare volume
and source motros	of cubes and cuboids
(m^2) and estimate the	using standard units,
area of irregular	including cubic
shapes	centimetres (cm ³)
• estimate volume [for	and cubic metres
example, using 1 cm^3	(m ³), and extending
blocks to build	to other units [for
cuboids (including	example, mm ³ and
cubes)] and capacity	

Geometry

2-D Shapes	 Complete inset puzzles. Make arrangements using shapes. Talk about and explore 2D shapes using informal and mathematical language. Build with a range of resources; select shapes appropriately such as flat surfaces for building, a triangular prism for a roof. Combine shapes to 	 Select, rotate and manipulate shapes 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. Investigate how shapes can be combined to make new shapes. Recognise that squares and rectangles of different sizes and orientations have four straight sides 	recognise and name common 2-D shapes [for example, rectangles (including squares), circles and triangles]	identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line • identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] • compare and sort common 2-D shapes and everyday objects	Draw 2-D shapes	compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes • identify lines of symmetry in 2-D shapes presented in different orientations
	 Combine shapes to make new ones such as arch or a bigger triangle. 	orientations have four straight sides and four corners.				
3-D Shapes	 Complete inset puzzles. Combine objects like blocks and cups and put objects inside others and take them out again. 	 Select, rotate and manipulate shapes to develop spatial reasoning skills. Compose and decompose shapes so that children recognise a 	recognise and name common 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]	recognise and name common 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]. • compare and sort common 3-D shapes and everyday shapes	make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them	

distinguish between regular and irregular polygons based on reasoning about equal sides and angles. • use the properties of rectangles to deduce related facts and find missing lengths and angles	draw 2-D shapes using given dimensions and angles • compare and classify geometric shapes based on their properties and sizes • illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
identify 3-D shapes, including cubes and other cuboids, from 2-D representations	recognise, describe and build simple 3-D shapes, including making nets

km³]

	 Talk about and explore 3D shapes using informal and mathematical language. Build with a range of resources; select shapes appropriately such as flat surfaces for building, a triangular prism for a roof. Combine shapes to make new ones such as arch or a bigger triangle. 	 shape can have other shapes within it, just as numbers can. Investigate how shapes can be combined to make new shapes. 					
Angles and Lines	 Describe a familiar route. Notice patterns and arrange things in patterns. Talk about and identify the patterns around them such as pointy, spotty, blobs. Extend and create ABAB patterns. Notice and create an error in repeating patterns. 	 Continue, copy and create repeating patterns. Make and describe patterns with varying rules (including AB, ABB and ABBC) and objects 		recognise angles as a property of shape or a description of a turn • 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 • identify horizontal and vertical lines and pairs of perpendicular and parallel lines	identify acute and obtuse angles and compare and order angles up to two right angles by size • identify lines of symmetry in 2-D shapes presented in different orientations • complete a simple symmetric figure with respect to a specific line of symmetry	 know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles otraw given angles, and measure them in degrees identify: Pangles at a point and one whole turn (total 360°) Pangles at a point on a straight line and ¹/₂ a turn (total 180°) Pother multiples of 90° 	 find unknown angles in any triangles, quadrilaterals, and regular polygons recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles

Position and direction	 Climb and squeeze themselves into different types of space. Understand position through words alone. Discuss routes and locations using words like 'in front of' and 'behind', 'on', 'in' and 'under'. 	 Use and understand positional direction. Talk about maps and plans. Create a map describing a simple route. Create a symmetrical arrangement. Use positional language to describe where objects are in relation to other objects. 	describe position, direction and movement, including whole, half, quarter and three-quarter turns	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)		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
				Statistics		
Present and interpret				 interpret and construct simple pictograms, tally charts, block diagrams and simple tables 	interpret and present data using bar charts, pictograms and tables	interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs

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

 complete, read and interpret information in tables, including timetables

interpret and

construct pie charts and line graphs and use these to solve problems

Solve		ask and answer	solve one-step and	solve comparison,
problems		simple questions by	two-step questions	sum and difference
•		counting the number	[for example, 'How	problems using
		of objects in each	many more?' and	information
		category and sorting	'How many fewer?']	presented in bar
		the categories by	using information	charts, pictograms,
		quantity	presented in scaled	tables and other
		 ask and answer 	bar charts and	graphs
		questions about	pictograms and	
		totalling and	tables	
		comparing		
		categorical data		

solve comparison, sum and difference problems using information presented in a line graph calculate and interpret the mean as an average