



Maths Progression Ladder

WEST HOVE
INFANT SCHOOL
.....
A family of friends



	Year R (Number and Numerical Patterns)		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	
	Nursery	Reception							
Place Value	<p>By the end of Reception:</p> <p>Number ELG:</p> <ul style="list-style-type: none"> Have a deep understanding of number to 10, including the composition of each number. Subitise (recognise quantities without counting) up to 5. <ul style="list-style-type: none"> Automatically recall (without reference to rhymes, counting or other aids) number bonds to 10, including double facts. <p>Numerical Patterns ELG:</p> <ul style="list-style-type: none"> Verbally count beyond 20, recognizing the pattern of the counting system. Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, or less than or the same as another quantity. Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed evenly. 		<p>By the end of Year 2, pupils should be taught to:</p> <ul style="list-style-type: none"> 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) <ul style="list-style-type: none"> 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 in words use place value and number facts to solve problems. 		<p>By the end of Year 4, children:</p> <ul style="list-style-type: none"> count in multiples of 6, 7, 9, 25 and 1000 find 1000 more or less than a given number count backwards through zero to include negative numbers recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) <ul style="list-style-type: none"> order and compare numbers beyond 1000 identify, represent and estimate numbers using different representations round any number to the nearest 10, 100 or 1000 solve number and practical problems that involve all of the above and with increasingly large positive numbers read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value. 		<p>By the end of Year 6, children:</p> <ul style="list-style-type: none"> read, write, order and compare numbers up to 10 000 000 and determine the value of each digit count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 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. read Roman numerals to 1000 (M) and recognise years written in Roman numerals 		
	Counting	Counting	Counting	Counting	Counting	Counting	Counting	Counting	Counting
	<p>Recite numbers past 5.</p> <p>Say one number for each item in order:1,2,3,4,5.</p> <p>Know that the last number reached when counting a small set of objects tells you how many there are in total (cardinal principle).</p> <p>Show 'finger numbers' up to 5.</p> <p>Link numerals and amounts: for example, showing the right number of objects to match the numeral up to 5.</p>	<p>Count objects, actions and sounds.</p> <p>Link the number symbol to its cardinal number value.</p> <p>Count beyond 10.</p> <p>Aut 1- focus on counting, numerals and sets of objects 1-5.</p> <p>Aut 2- focus on counting, numerals, sets of objects 1-10</p>	<p>Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.</p> <p><i>AUT1 Count to 10, count one more or one less from any number within 10.</i></p> <p><i>AUT2 Count to 20, count one more or one less from any number within 20.</i></p> <p><i>SPR1Count to 50, count one more or one less from any number within 50.</i></p> <p><i>SUM2 Count to 100, count one more or one less from any number within 100.</i></p> <p>Count numbers to 100 in numerals; count in multiples of twos, fives and tens.</p> <p><i>AUT 2 NCETM looking at pairs, 2s in even numbers.</i></p> <p><i>Counting in multiples of 2 and 5 introduced in SPR1.</i></p>	<p>Count in steps of 2, 3 and 5 from 0, and in tens from any number, forward and backward.</p> <p>AU1</p>	<p>Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number.</p>	<p>Count in multiples of 6, 7, 9, 25 and 1000.</p> <p>Count backwards through zero to include negative numbers.</p>	<p>Count forwards of backwards in steps of powers of 10 for any given number up to 1 000 000.</p> <p>Count forwards and backwards with positive and negative whole numbers, including through zero.</p>	<p>Count forwards of backwards in steps of powers of 10 for any given number up to 1 000 000.</p> <p>Count forwards and backwards with positive and negative whole numbers, including through zero.</p>	
Represent	Represent	Represent	Represent	Represent	Represent	Represent	Represent	Represent	
<p>Experiment with their own symbols and marks as well as numerals.</p>	<p>Experiment with their own symbols and marks as well as numerals.</p>	<p>Identify and represent numbers using objects and pictorial representations.</p> <p>Read and write numbers to 100 in numerals.</p>	<p>Read and write numbers to at least 100 in numerals and in words.</p> <p>Identify, represent and estimate numbers using</p>	<p>Identify, represent and estimate numbers using different representations.</p> <p>Read and write numbers up to 1000 in numerals and words.</p>	<p>Identify, represent and estimate numbers using different representations.</p> <p>Read Roman numerals to 100 (1 to C) and know that over time, the numeral system changed</p>	<p>Read, write, (order and compare) numbers to at least 1 000 000 and determine the value of each digit.</p> <p>Read Roman Numerals to 1000 (M) and</p>	<p>Read, write, (order and compare) numbers up to 10 000 000 and determine the value of each digit.</p>		

			Read and write numbers from 1 to 20 in numerals and words. <i>AU1 up to 10, AUT 2 up to 20, SP1,2 up to 50, SUM 1, 2 up to 100.</i>	different representations, including the number line. AU1		to include the concept of zero and place value.	recognise years written in Roman numerals.	
	Use PV and Compare and Subitising Develop fast recognition of up to 3 objects, without having to count them individually. (subitising) Show 'finger numbers' up to 5.	Use PV and Compare and Subitising Subitise up to 5 then notice patterns up to 10. Understand the 'one more than/ one less than' relationship between consecutive numbers. Compare numbers (more than, fewer, less than) Aut 1- conceptually subitising up to 5, introduce perceptual subitising within 1-5. (noticing groups within amounts) Aut 2- conceptual and perceptual subitising up to 5.	Use PV and Compare Given a number, identify one more and one less <i>AU, SPR, SUM Compare numbers using language greater than, less than, equal to and symbols <, >, =.</i>	Use PV and Compare Recognise the place value of each digit in a two-digit number (tens, ones) Compare and order numbers from 0 up to 100; use <, > and = signs AU1	Use PV and Compare Recognise the place value of each digit in a three-digit number (hundreds, tens, ones). Compare and order numbers to 1000.	Use PV and Compare Find 1000 more or less than a given number. Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones). Order and compare numbers beyond 1000	Use PV and Compare (Read, write) order and compare numbers to at least 1 000 000 and determine the value of each digit.	Use PV and Compare (Read, write) and order and compare numbers to 10 000 000 and determine the value of each digit.
	Problems & Rounding	Problems & Rounding Linked to subitising (perceptual subitising)	Problems & Rounding <i>Use first, then, now to solve problems</i>	Problems & Rounding Use place value and number facts to solve problems AU1	Problems & Rounding Solve number problems and practical problems involving these ideas.	Problems & Rounding Round any number to the nearest 10, 100 or 1000. Solve number and practical problems that involve all of the above and with increasingly large positive numbers.	Problems & Rounding 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.	Problems & Rounding Round any whole number to a required degree of accuracy. Use negative numbers in context, calculate intervals across zero. Solve number and practical problems that involve all of the above.
Vocabulary	Numbers 1-20, count on/back, lots, more, few, fewer, compare, sort, order, before, after, less, many, most, the same as, ones, pair, how many, altogether, subitise, same, different.		20 – 100 count (on/up/to/from/down), least, fewest, smallest, greater, lesser, equal to, odd, even, units, tens, ten more/less, digit, numeral, figure(s), compare (in) order/a different order, size, value, between, halfway between, above, below	Numbers to one hundred, hundreds, partition, recombine, hundred more/less, represents, exchange, place value column	numbers to one thousand, equivalent, tally multiple of, factor of, rule, relationship, greater than, Roman numerals, halfway approximate, approximately, round to the nearest ten, round to the nearest hundred	ten thousand, hundred thousand, million, count in sixes, sevens, nines, twenty-fives and so on to hundreds, next, consecutive, integer, positive, negative above/below zero, minus, negative numbers, one thousand more, one thousand less, round to the nearest thousand	factor pair, divisibility, square number, prime number, ascending/ descending order, ten thousand, hundred thousand	million, round to the nearest hundred thousand
Addition & Subtraction	By the end of Reception: Number ELG: <ul style="list-style-type: none"> Have a deep understanding of number to 10, including the composition of each number. Subitise (recognise quantities without counting) up to 5. 		By the end of Year 2, pupils should be taught to: <ul style="list-style-type: none"> solve problems with addition and subtraction: <ul style="list-style-type: none"> using concrete objects and pictorial representations, including those involving numbers, quantities and measures applying their increasing knowledge of mental and written methods 	By the end of Year 4 (LKS2), pupils should be taught to: <ul style="list-style-type: none"> add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate estimate and use inverse operations to check answers to a calculation solve addition and subtraction two-step problems 		By the end of Year 6 (UKS2), pupils should be taught to: <ul style="list-style-type: none"> 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 use rounding to check answers to calculations and determine, in the context of a problem, levels of 		

<ul style="list-style-type: none"> Automatically recall (without reference to rhymes, counting or other aids) number bonds to 10, including double facts. <p>Numerical Patterns ELG:</p> <ul style="list-style-type: none"> Verbally count beyond 20, recognizing the pattern of the counting system. Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, or less than or the same as another quantity. Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed evenly. 	<ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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 recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. 	<p>in contexts, deciding which operations and methods to use and why.</p>	<p>accuracy</p> <ul style="list-style-type: none"> solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why use their knowledge of the order of operations to carry out calculations involving the four operations use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. 				
<p>Recall, Represent, Use</p>	<p>Recall, Represent, Use</p> <p>Explore the composition of numbers to 10.</p> <p>Automatically recall number bonds for numbers 0-10. Aut 1- introduce perceptual subitising for 1-5 Aut 2-composition of numbers up to 5 (incl. number bonds, parts and whole) Spr- perceptual subitising for 1-10 Composition of numbers (incl number bonds up 10)</p>	<p>Recall, Represent, Use</p> <p>Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. <i>AU, SP, SUM Compare addition and subtraction statements using language greater than, less than, equal to, and use symbols <, >, =</i></p> <p>Represent and use number bonds and related subtraction facts within 20.</p>	<p>Recall, Represent, Use</p> <p>Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.</p> <p>Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.</p> <p>Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.</p> <p>AU1 AU2</p>	<p>Recall, Represent, Use</p> <p>Estimate the answer to a calculation and use inverse operations to check answers.</p>	<p>Recall, Represent, Use</p> <p>Estimate and use inverse operations to check answers to a calculation.</p>	<p>Recall, Represent, Use</p> <p>Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.</p>	<p>Recall, Represent, Use</p> <p>Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.</p>
<p>Calculations</p>	<p>Calculations</p> <p>Aut 1- introduce perceptual subitising for 1-5 Aut 2-composition of numbers up to 5 (incl. number bonds, parts and whole) Spr- perceptual subitising for 1-10 Composition of numbers (incl number bonds up 10)</p>	<p>Calculations</p> <p>Add and subtract one-digit and two-digit numbers to 20, including zero.</p>	<p>Calculations</p> <p>Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:</p> <ul style="list-style-type: none"> A two-digit number and ones A two-digit number and tens Two two-digit numbers Adding three one-digit numbers <p>AU1 AU2</p>	<p>Calculations</p> <p>Add and subtract numbers mentally, including:</p> <ul style="list-style-type: none"> A three-digit number and tens A three-digit number and hundreds <p>Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.</p>	<p>Calculations</p> <p>Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.</p>	<p>Calculations</p> <p>Add and subtract whole numbers with more than 4-digits, including using formal written methods (columnar addition and subtraction).</p> <p>Add and subtract numbers mentally with increasingly large numbers.</p>	<p>Calculations</p> <p>Perform mental calculations, including those with mixed operations and large numbers.</p> <p>Use their knowledge of the order of operations to carry out calculations involving the four operations.</p>
<p>Solve Problems</p>	<p>Solve Problems</p>	<p>Solve Problems</p> <p>Solve one-step</p>	<p>Solve Problems</p>	<p>Solve Problems</p>	<p>Solve Problems</p>	<p>Solve Problems</p>	<p>Solve Problems</p>

	Solve real world mathematical problems with numbers up to 5.	Aut 1- introduce perceptual subitising for 1-5 Aut 2-composition of numbers up to 5 (incl. number bonds, parts and whole) Spr- perceptual subitising for 1-10 Composition of numbers (incl number bonds up to 10) Discuss mathematical ideas throughout the day (e.g. How many milks will we need, two people are having bananas and 1 is having a pear- how many fruit altogether?)	problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ___ - 9$.	Solve problems with addition and subtraction: <ul style="list-style-type: none"> Using concrete objects and pictorial representations, including those involving numbers, quantities and measures Applying their increasing knowledge of mental and written methods AU1 AU2	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.	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. Solve problem 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.
Vocabulary	Add, more, altogether, takeaway, number line, one more, ones less, equals, equal to, double, half, how many, make, total, compare, more, fewer.	Number bonds, addition, plus, sum, greater, inverse, near double, halve, is the same as, (including equals sign), difference between, how many more to make...? how many more is...than...? how much more is....?, subtract, minus, how many fewer is...than...? how much less is....?	Digit, greater than, less than	Sum, addend, addend, total, altogether, ten more, one hundred more, one hundred less, difference between, minus, column, regroup, exchange, rename, value, minuend, subtrahend, difference	Addend, inverse, represent, increase, decrease, minuend, subtrahend, difference, thousand/s, less than, more than, tenth/s,	Ten thousand/s, hundred thousand/s, multiple, negative number, positive number,	millions	
Multiplication & Division	By the end of Reception:	By the end of Year 2, pupils should be taught to: <ul style="list-style-type: none"> 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 (\times), division (\div) 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, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. 		By the end of Year 4, (LKS2), pupils should be taught to: <ul style="list-style-type: none"> 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 multiply two-digit and three-digit numbers by a one-digit number using formal written layout solve problems involving multiplying 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. 		By the end of Year 6, (UKS2), pupils should be taught to: <ul style="list-style-type: none"> 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 (nonprime) numbers establish whether a number up to 100 is prime and recall prime numbers up to 19 multiply and divide numbers mentally drawing upon known facts multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 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 method of short division where appropriate, interpreting remainders according to the context 		
	Recall, Represent, Use	Recall, Represent, Use	Recall, Represent, Use	Recall, Represent, Use	Recall, Represent, Use	Recall, Represent, Use	Recall, Represent, Use	Recall, Represent, Use
	<i>Introduce language of part and whole using visual representation. Understand that a whole object can be made up of parts that you cannot always see.</i> <i>Understand that double is the same amount again.</i>	<i>Make equal groups – grouping equal groups, sharing equal groups</i> <i>Make arrays</i>	Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including	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 .	Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.	Identify common factors, common multiples and prime numbers.	

<p><i>Understand that double is two of the same amount, which we can add together to make a whole amount.</i></p> <p><i>Understand that objects can be shared equally.</i></p> <p><i>Share objects fairly into groups of equal amounts.</i></p>	<p><i>Make doubles</i></p> <p><i>Count in multiples of 2, 5 and 10 up to 50 SPR up to 100</i></p>	<p>recognising odd and even numbers.</p> <p>Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.</p> <p>AU2 SP1</p>		<p>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.</p> <p>Recognise and use factor pairs and commutativity in mental calculations.</p>	<p>Multiply and divide numbers mentally drawing upon known facts.</p> <p>Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</p> <p>Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.</p> <p>Establish whether a number up to 100 is prime and recall prime numbers up to 19.</p> <p>Recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³).</p>	<p>Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</p> <p>Use their knowledge of the order of operations to carry out calculations involving the four operations.</p> <p>Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.</p>
<p style="text-align: center;">Calculations</p> <p>Investigate sets of objects to make double of that amount.</p> <p>Investigate equal sets of objects to find whole amount.</p> <p style="text-align: center;"><i>Share objects fairly into groups of equal amounts</i></p>	<p style="text-align: center;">Calculations</p>	<p style="text-align: center;">Calculations</p> <p>Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (/) and equals (=) signs.</p> <p>AU2 SP1</p>	<p style="text-align: center;">Calculations</p> <p>Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.</p>	<p style="text-align: center;">Calculations</p> <p>Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.</p>	<p style="text-align: center;">Calculations</p> <p>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.</p> <p>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.</p>	<p style="text-align: center;">Calculations</p> <p>Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication</p> <p>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 remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.</p> <p>Use written division methods in cases where the answer has up to two decimal places.</p>
	<p style="text-align: center;">Solve Problems</p> <p>Solve one-step problems involving multiplication and division, by calculating the answer using</p>	<p style="text-align: center;">Solve Problems</p> <p>Solve problems involving multiplication and division, using materials arrays, repeated addition,</p>	<p style="text-align: center;">Solve Problems</p> <p>Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and</p>	<p style="text-align: center;">Solve Problems</p> <p>Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one</p>	<p style="text-align: center;">Solve Problems</p> <p>Solve problems involving multiplication and division including using their knowledge of factors and</p>	<p style="text-align: center;">Solve Problems</p> <p>Solve problems involving addition, subtraction, multiplication and division.</p>

		concrete objects, pictorial representations and arrays with the support of the teacher.	mental methods and multiplication and division facts, including problems in contexts AU2 SP1	correspondence problems in which n objects are connected to m objects.	digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.	multiples, squares and cubes. Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.		
Vocabulary		Times, counting in ones, twos, fives, tens, lots of, groups of, once, twice, five times, sharing, share, set, group, left, left over	Odd, even, count in twos, fives, tens, (forwards from/backwards from), how many times?, multiples of, multiply by, repeated addition, array, row, column, halve, share equally, group in pairs, threes etc., equal groups of, divide, divided by	Count in multiples of 3	multiple, factor, product, division, remainder, doubling, halving, multiplication fact, division fact, divisible, represented	inverse, square, squared, cube, cubed, divisor, dividend, quotient, remainder, equivalent	Largest common multiple, lowest common factor, positive, integers, prime numbers, brackets	Multiplicatively, composite number, scale factor, ratio
		By the end of Reception:		By the end of Year 2, pupils should be taught to: <ul style="list-style-type: none"> recognise, find, name and write fractions $\frac{3}{4}$, $\frac{1}{4}$, $\frac{4}{2}$ and $\frac{4}{3}$ of a length, shape, set of objects or quantity write simple fractions for example, $2 \frac{1}{6} = 3$ and recognise the equivalence of $\frac{4}{2}$ and $2 \frac{1}{1}$. 	By the end of Year 4, (LKS2), pupils should be taught to: <ul style="list-style-type: none"> recognise and show, using diagrams, families of common equivalent fractions count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. 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 add and subtract fractions with the same denominator 	By the end of Year 6 (UKS2), pupils should be taught to: <ul style="list-style-type: none"> use common factors to simplify fractions; use common multiples to express fractions in the same denomination compare and order fractions, including fractions > 1 add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$] divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$] 		
Fractions	Recognise	Recognise Introduce language of part and whole using visual representation. Understand that a whole object can be made up of parts that you cannot always see. Understand that double is the same amount again. Understand that half is sharing equally in two parts.	Recognise and Write Recognise, find and name a 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.	Recognise and Write 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. SP1 SP2	Recognise and Write 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 Write Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.	Recognise and Write 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 example, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1 \frac{1}{5}$).	
		Compare Investigate sets of objects to make double of that amount.	Compare	Compare Recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.	Compare Recognise and show, using diagrams, equivalent	Compare Recognise and show, using diagrams, families of	Compare Compare and order fractions whose denominators are all	Compare Use common factors to simply fractions; use common multiples to

				SP1 SP2	fractions with small denominators. Compare and order unit fractions, and fractions with the same denominators.	common equivalent fractions.	multiples of the same number.	express fractions in the same denomination. Compare and order fractions, including fractions > 1.
		Calculations Share objects equally between two sets.	Calculations	Calculations Write simple fractions for example, $\frac{1}{2}$ of 6 = 3 SP1 SP2	Calculations Add and subtract fractions with the same denominator within one whole (for example $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$).	Calculations Add and subtract fractions with the same denominator.	Calculations Add and subtract fractions with the same denominator and denominators that are multiples of the same number. Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.	Calculations Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. Multiple simple pairs of proper fractions, writing the answer in its simplest form (for example $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$). Divide proper fractions by whole numbers (for example, $\frac{1}{3}$ divided by 2 = $\frac{1}{6}$).
Fraction Vocabulary	Double, half, whole	Whole, equal parts, four equal parts, one half, two halves, a quarter, two quarters	Three quarters, one third, a third, equivalence, equivalent	mixed number, numerator, denominator, sixths, sevenths, eighths, tenths	hundredths, equivalent proportion	proper/improper fraction, thousandths		
Decimals					By the end of Year 4, pupils should be taught to: <ul style="list-style-type: none"> recognise and write decimal equivalents of any number of tenths or hundredths recognise and write decimal equivalents to 4 1 , 2 1 , 4 3 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 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 solve simple measure and money problems involving fractions and decimals to two decimal places. 	By the end of Year 6 (UKS2), pupils should be taught to: <ul style="list-style-type: none"> associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$] identify the value of each digit in numbers given to three decimal places and 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 		
						Recognise and Write Decimal equivalents of any number of tenths or hundredths. Decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$.	Recognise and Write 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 decimal equivalents.	Recognise and Write Identify the value of each digit in numbers given to three decimal places.
						Compare Round decimals with one decimal place to the nearest whole number.	Compare Round decimals with two decimal places to the	

					Compare numbers with the same number of decimal places up to two decimal places.	nearest whole number and to one decimal place. Read, write, order and compare numbers with up to three decimal places.	
					Calculations 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.	Calculations Solve problems involving number up to three decimal places.	Calculations 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.
Decimals Vocabulary					decimal point, decimal place, decimal		
Percentages				By the end of Year 4, pupils should be taught to: <ul style="list-style-type: none"> recognise and show, using diagrams, families of common equivalent fractions count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. 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 add and subtract fractions with the same denominator recognise and write decimal equivalents of any number of tenths or hundredths recognise and write decimal equivalents to 4 $\frac{1}{10}$, $\frac{2}{10}$, $\frac{3}{10}$ 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 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 solve simple measure and money problems involving fractions and decimals to two decimal places. 		By the end of Year 6 (UKS2), pupils should be taught to: <ul style="list-style-type: none"> recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$ recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. 	
						Solve simple measure and money problems involving fractions and decimals to two decimal places.	Recognise the per cent symbol (%) and understand that per cent related to 'number of parts per hundred', and write percentages as a fraction

						with denominator 100, and as a decimal. Solve problems which require knowing percentages 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.	Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.
Percentages Vocabulary					decimal equivalent	in every, for every percentage, per cent, %.	
Ratio and Proportion						<p>By the end of Year 6 (UKS2), pupils should be taught to:</p> <ul style="list-style-type: none"> • solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts • solve problems involving 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. 	
						<p>Solve problems with the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.</p> <p>Solve problems involving the calculation of percentages (for example, of measures, and such as 15% of 360) and the use of percentages for comparison.</p> <p>Solve problems involving shapes where the scale factor is known or can be found.</p> <p>Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.</p>	
Ratio and Proportion Vocabulary							proportion, "for every....there are", part, whole, scale factor
Algebra						<p>By the end of Year 6 (UKS2), pupils should be taught to:</p> <ul style="list-style-type: none"> • 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 	

						<ul style="list-style-type: none"> enumerate possibilities of combinations of two variables. 	<p>Use simple formulae.</p> <p>Generate and describe linear number sequences.</p> <p>Express missing number problems algebraically.</p> <p>Find pairs of numbers that satisfy an equation with two unknowns.</p> <p>Enumerate possibilities of combinations of two variables.</p>	
Algebra Vocabulary							formula, formulae, equation, unknown, variable	
Measurement	<p>By the end of Reception:</p> <p>Number ELG:</p> <ul style="list-style-type: none"> Have a deep understanding of number to 10, including the composition of each number. <ul style="list-style-type: none"> Subitise (recognise quantities without counting) up to 5. Automatically recall (without reference to rhymes, counting or other aids) number bonds to 10, including double facts. <p>Numerical Patterns ELG:</p> <ul style="list-style-type: none"> Verbally count beyond 20, recognizing the pattern of the counting system. Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, or less than or the same as another quantity. Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed evenly. 		<p>By the end of Year 2, pupils should be taught to:</p> <ul style="list-style-type: none"> 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 the results using >, < and = 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 <ul style="list-style-type: none"> 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 		<p>By the end of Year 4 (KS2), pupils should be taught to:</p> <ul style="list-style-type: none"> Convert between different units of measure [for example, kilometre to metre; hour to minute] measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres find the area of rectilinear shapes by counting squares estimate, compare and calculate different measures, including money in pounds and pence read, write and convert time between analogue and digital 12- and 24-hour clocks solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. 		<p>By the end of Year 6 (UKS2), pupils should be taught to:</p> <ul style="list-style-type: none"> 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. 	
	Using Measures	Using Measures	Using Measures	Using Measures	Using Measures	Using Measures	Using Measures	Using Measures
Make comparisons between objects relating to size, length, weight and capacity.	<p>Compare length, weight and capacity</p> <p>Model comparative language using the word 'than' e.g. 'This is heavier than that.'</p> <p>Ask children to test predictions such as pour the jug into the teapot, which will hold more?</p> <p>Compare objects of different lengths, weights and capacities.</p> <p>Use non-standard units to measure length and height of</p>	<p>Compare, describe and solve practical problems for:</p> <ul style="list-style-type: none"> 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, full, quarter) 	<p>Choose and use appropriate standard units to estimate and measure length/height in any directions (m/cm); mass (kg/g); temperature (°C); capacity (litre/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels.</p> <p>Compare and order lengths, mass, volume/capacity and record the results using >, < and =.</p> <p>SP2</p>	Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).	Convert between different units of measure (for example, kilometre to metre; hour to minute). Estimate, compare and calculate different measures.	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, pounds and pints. Use all four operations to solve problems involving measure (for	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 and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation up to three decimal places.	

	objects, how heavy an object is. Use balance scales to find heaviest, lightest.	<ul style="list-style-type: none"> Time (for example, quicker, slower, earlier, later) <p>Measure and begin to record the following:</p> <ul style="list-style-type: none"> Lengths and heights Mass/weight Capacity and volume Time (hours, minutes, seconds) 	SU1			example, length, mass, volume, money) using decimal notation, including scaling.	Convert between miles and kilometres.
	<p>Money Introduce coins in role play and understand that coins show different amounts.</p> <p>Incorporate money and coins into calculations and examples when solving addition and subtraction problems.</p>	<p>Money Recognise and know the value of different denominations of coins and notes</p>	<p>Money Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value.</p> <p>Find different combinations of coins that equal the same amounts of money.</p> <p>Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.</p> <p>AU2</p>	<p>Money Add and subtract amounts of money to give change, using both £ and p in practical contexts.</p>	<p>Money Estimate, compare and calculate different measures, including money in pounds and pence.</p>	<p>Money Use all four operations to solve problems involving measure (for example, money).</p>	
	<p>Time Begin to describe a sequence of events, real, or fictional using words such as 'first' 'then'...</p>	<p>Time As part of daily routines use language such as now and next, first, then. Visual timetable to organise the day. Calendar to discuss days of the week and Months of year. Link to UW with discussion on seasons.</p>	<p>Time Sequence events in chronological order using language (for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening).</p> <p>Recognise and use language relating to dates, including days of the week, weeks, months and years.</p> <p>Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.</p>	<p>Time Compare and sequence intervals of time.</p> <p>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.</p> <p>Know the number of minutes in an hour and the numbers of hours in a day.</p> <p>***</p>	<p>Time Tell and write the time from an analogue clock, including using Roman numerals from 1 to X11, and 12-hour and 24-hour clocks.</p> <p>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.</p> <p>Know the number of seconds in a minute and the number of days in each month, year and leap year.</p> <p>Compare durations of events (for example to calculate the time taken by particular events of tasks).</p>	<p>Time Read, write and convert time between analogue and digital 12- and 24-hour clocks.</p> <p>Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.</p>	<p>Time Solve problems involving converting between units of time.</p> <p>Use, read, write and convert between standard units, converting measurements of time from a small unit of measure to a larger unit, and vice versa.</p>
				<p>Perimeter, Area and Volume Measure the perimeter</p>	<p>Perimeter, Area and Volume</p>	<p>Perimeter, Area and Volume</p>	<p>Perimeter, Area and Volume</p>

					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.	Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres. Calculate and compare the area of rectangles (including squares), and including using standard unites, square centimetres (cm ²) and square metres (m ²) and estimate the area of irregular shapes. Estimate volume (for example, using 1cm ³ blocks to build cuboids (including cubes) and capacity (for example, using water).	Recognise that shapes with the same areas can have different perimeters and vice versa. Recognise when it is possible to use formulae for area and volume of shapes. Calculate the area of parallelograms and triangles. Calculate, estimate and compare volume of cubes and cuboids using standard unites, including cubic centimetres (cm ³) and cubic metres (m ³), and extending to other unites (for example, mm ³ and km ³).
Vocabulary	Days of the week, week, month, year, weekend, birthday, holiday, morning, afternoon, evening, night, midnight, bedtime, dinnertime, playtime, today, yesterday, tomorrow, before, after, next, last, now, soon, early, late, quick, fast, slow, old, new, watch, clock, always, never, first, size, weight, capacity, time, money, Long, longer, longest short, shorter, shortest, heavy, light, empty, full, tall, small, large, thick, thin, low, deep, ruler, far, near, holds, container, weigh, weights, coin, pound, pence cost, money, penny, buy, sell, pay, price, how many?	Time and Money Seasons: Spring, Summer, Autumn, Winter Quicker, quickest, quickly, faster, fastest, slower, slowest, slowly, older, oldest, newer, newest, takes longer, takes less time, hour, o'clock, half past, hands, how long ago? How long will it be to...?, how long will it take to...?, how often?, sometimes, usually, once, twice, second, third etc., estimate, close to, about the same as, just over/under, too many/few, not enough, enough Spend, spent, change, dear(er), costs more, costs less, costs the same as, how much? Length, Mass & Capacity Size, bigger, larger, length, width, height, depth, taller, tallest, high, higher, highest, wide, narrow, shallow, close, Metre, metre stick Half full, balances, heavier, heaviest, lighter, lightest, scales	Quarter past/to, fortnight, temperature (degrees), m/cm, g/kg, ml/l	scale, approximately, millimetre, centimetre, metre, kilometre, mile, perimeter, tape measure, capacity, volume, temperature degree centigrade, calendar, o'clock, half past, quarter past, quarter to, 5, 10, 15 ... minutes past, a.m., p.m. digital/analogue clock/watch, Roman numerals, 12-hour clock, 24-hour clock, cheaper, total	unit, standard unit, metric unit, square centimetre (cm ²), measuring cylinder, millennium, leap year, timetable, arrive, depart	imperial unit, square metre (m ²), square millimetre (mm ²), pint, gallon, discount, currency, radius, diameter	yard, foot, feet, inch, inches, circumference, centilitre cubic centimetres(cm ³), cubic metres (m ³), cubic millimetres (mm ³), cubic kilometres (km ³), profit, loss	
Geometry	By the end of Reception: Numerical Patterns ELG: <ul style="list-style-type: none"> Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed evenly. 	By the end of Year 2, pupils should be taught to: Properties of shapes: <ul style="list-style-type: none"> identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces 	By the end of Year 4, should be taught to: <ul style="list-style-type: none"> compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes 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 	By the end of Year 6, should be taught to: <ul style="list-style-type: none"> draw 2-D shapes using given dimensions and angles recognise, describe and build simple 3-D shapes, including making nets compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons 				

		<ul style="list-style-type: none"> 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 and 3-D shapes and everyday objects <p style="text-align: center;">Position and direction:</p> <ul style="list-style-type: none"> 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 anticlockwise). 		<p>in different orientations</p> <ul style="list-style-type: none"> complete a simple symmetric figure with respect to a specific line of symmetry. 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. 		<ul style="list-style-type: none"> illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. describe positions on the full coordinate grid (all four quadrants) <ul style="list-style-type: none"> draw and translate simple shapes on the coordinate plane, and reflect them in the axes. 		
	<p>Pattern Talk about and identify the patterns around them. For example; stripes on clothes, designs on rugs, wallpaper. Use informal language like 'pointy', 'spotty', 'blobs' etc.</p> <p>Extend and create ABAB patterns.</p> <p>Notice and correct an error in a repeating pattern.</p>	<p>Pattern Continue, copy and create repeating patterns.(make patterns with varying rules e.g. AB, ABB, ABBC)</p>						
	<p>2-D Shapes Talk about and explore 2D shapes using informal and mathematical language (sides, corners, straight, flat, round).</p> <p>Combine shapes to make new ones, e.g. An arch, a bigger triangle.</p>	<p>2-D Shapes Compose and decompose shapes so that children recognize a shape can have other shapes within it, just as numbers can.</p> <p>Select, rotate and manipulate shapes in order to develop spatial reasoning skills.</p>	<p>2-D Shapes Recognise and name common 2-D shapes (for example, rectangles (including squares), circles and triangles).</p>	<p>2-D Shapes Identify and describe the properties of 2-D shapes, including the number of sides and lines of symmetry in a vertical line.</p> <p>Identify 2-D shapes on the surface of 3-d Shapes, (for example, a circle on a cylinder and a triangle on a pyramid)</p> <p>Compare and sort common 2-D shapes and everyday objects.</p> <p>*****</p>	<p>2-D Shapes Draw 2-D shapes.</p>	<p>2-D Shapes Compare and classic geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.</p> <p>Identify lines of symmetry in 2-D shapes presented in different orientations.</p>	<p>2-D Shapes Distinguished between regular and irregular polygons based on reasoning about equal sides and angles.</p> <p>Use the properties of rectangles to deduce related facts and find missing lengths and angles.</p>	<p>2-D Shapes Draw 2-D shapes using given dimensions and angles.</p> <p>Compare and classify geometric shapes based on their properties and sizes.</p> <p>Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.</p>
	<p>3-D Shapes Talk about and explore 3D shapes using informal and mathematical language (sides, corners, straight, flat, round).</p> <p>Select shapes appropriately flat surfaces for building, a triangular prism for a roof etc.</p>	<p>3-D Shapes Compose and decompose shapes so that children recognize a shape can have other shapes within it, just as numbers can.</p> <p>Select, rotate and manipulate shapes in order to develop spatial reasoning skills.</p>	<p>3-D Shapes Recognise and name common 3-dD shapes (for example, cuboids (including cubes), pyramids and spheres).</p>	<p>3-D Shapes Recognise and name common 3-D shapes (for example, cuboids (including cubes), pyramids and spheres).</p> <p>Compare and sort common 3-D shapes and everyday objects.</p>			<p>3-D Shapes Identify 3-D shapes, including cubes and other cuboids, from 2-D representations.</p>	<p>3-D Shapes Recognise, describe and build simple 3-D shapes, including making nets.</p>

					<p>Angles and Lines</p> <p>Recognise angles as a property of shape or a description of a turn.</p> <p>Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle.</p> <p>Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.</p>	<p>Angles and Lines</p> <p>Identify acute and obtuse angles and compare and order angles up to two right angles by size.</p> <p>Identify lines of symmetry in 2-D shapes presented in different orientations.</p> <p>Complete a simple symmetric figure with respect to a specific line of symmetry.</p>	<p>Angles and Lines</p> <p>Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.</p> <p>Draw given angles, and measure them in degrees.</p> <p>Identify:</p> <ul style="list-style-type: none"> - Angles at a point and one whole turn (total 360 degrees) - Angles at a point on a straight line and 1/2 a total (total 180 degrees) - Other multiples of 90 degrees 	<p>Angles and Lines</p> <p>Find unknown angles in any triangles, quadrilaterals, and regular polygons.</p> <p>Recognise angles where they meet as a point, are on a straight line, or are vertically opposite, and find missing angles.</p>
	<p>Position and Direction</p> <p>Understand position through words alone, e.g. "The bag is under the table", with no pointing.</p> <p>Describe a familiar route.</p> <p>Discuss routes and locations using words like 'in front of' and 'behind.'</p>	<p>Position and Direction</p> <p>Select, rotate and manipulate shapes in order to develop spatial reasoning skills.</p>	<p>Position and Direction</p> <p>Describe position, direction and movement, including whole, half, quarter and three-quarter turns.</p>	<p>Position and Direction</p> <p>Order and arrange combinations of mathematical objects in patterns and sequences.</p> <p>Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).</p> <p>*****</p>		<p>Position and Direction</p> <p>Describe positions on a 2-D grid as coordinates in the first quadrant</p> <p>Describe movements between positions as translations of a given unit to the left/right and up/down</p> <p>Plot specified points and draw sides to complete a given polygon</p>	<p>Position and Direction</p> <p>Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed</p>	<p>Position and Direction</p> <p>Describe positions on the full coordinate grid (all four quadrants)</p> <p>Draw and translate simple shapes on the coordinate plane, and reflect them in the axes</p>
Vocabulary	<p>Position, distance, after, before, in, on, inside, under, on top of, behind, next to, above, below, top, bottom, side, outside, around, underneath, in front, front, back, before, middle, up, down forwards, backwards, across, close, far, along, to, from, slide, roll, turn, stretch, bend, move</p>	<p>Position & Direction:</p> <p>Position, distance, after, before, in, on, inside, under, on top of, behind, next to, above, below, top, bottom, side, outside, around, underneath, in front, front, back, before, middle, up, down forwards, backwards, across, close, far, along, to, from, slide, roll, turn, stretch, bend, move</p> <p>Shape:</p> <p>Curve, straight, line, corner, edge, flat, square, triangle, oblong, circle, semi-circle (etc.), point, solid, inside, on, under, turn.</p>	<p>Position & Direction:</p> <p>Over, beside, opposite, apart, between, edge, centre, corner, direction, journey, left, right, sideways, near, through, towards, away from, movement, whole turn, half turn.</p> <p>Properties of Shape:</p> <p>Pyramid, cone, cylinder, curved, hollow, solid, corner (point, pointed), face, side, edge</p>	<p>Position & Direction:</p> <p>Rotation, clockwise, straight line, ninety degree turn, right angle</p> <p>Properties of Shape:</p> <p>Smaller, symmetrical, line of symmetry, fold, match, mirror line, reflection, pattern, repeating pattern, vertices, vertex pentagon, hexagon, octagon, circular, triangular, right angle</p>	<p>Position and Direction:</p> <p>compass point, north, south, east, west, N, S, E, W, horizontal, vertical, diagonal</p> <p>Angles:</p> <p>angle ... is a greater/smaller angle than, acute angle, obtuse angle</p>	<p>Position and Direction:</p> <p>construct, sketch, centre, right-angled base, square-based, reflect, reflection, north-east, north-west, south-east, south-west, translate, translation, rotate, rotation</p> <p>Properties of Shape:</p> <p>regular, irregular, 2-D, two-dimensional, oblong, rectilinear, equilateral triangle, isosceles triangle, scalene triangle, heptagon, parallelogram, rhombus, trapezium polygon, 3-D, three-dimensional, tetrahedron, polyhedron</p> <p>Angles:</p>	<p>Properties of Shape:</p> <p>regular, irregular, 2-D, two-dimensional, oblong, rectilinear, equilateral triangle, isosceles triangle, scalene triangle, heptagon, parallelogram, rhombus, trapezium polygon, 3-D, three-dimensional, tetrahedron, polyhedron</p> <p>Angles:</p> <p>set square angle measurer, compass</p>	<p>Properties of Shape:</p> <p>net, intersecting, intersection, plane, kite</p>

						set square angle measurer, compass		
Statistics	By the end of Reception:		<p>By the end of Year 2, pupils should be taught to:</p> <ul style="list-style-type: none"> 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 totaling and comparing categorical data 	<p>By the end of Year 4, children should be taught to:</p> <ul style="list-style-type: none"> interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. 		<p>By the end of Year 6, children should be taught to:</p> <ul style="list-style-type: none"> interpret and construct pie charts and line graphs and use these to solve problems calculate and interpret the mean as an average. 		
				<p>Present and Interpret</p> <p>Interpret and construct simple pictograms, tally charts, block diagrams and simple tables.</p>	<p>Present and Interpret</p> <p>Interpret and present data using bar charts, pictograms and tables.</p>	<p>Present and Interpret</p> <p>Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.</p>	<p>Present and Interpret</p> <p>Complete, read and interpret information in tables, including timetables.</p>	<p>Present and Interpret</p> <p>Interpret and construct pie charts and line graphs and use these solve problems.</p>
				<p>Solve Problems</p> <p>Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity,</p> <p>Ask and answer questions about totalling and comparing categorical data.</p>	<p>Solve Problems</p> <p>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.</p>	<p>Solve Problems</p> <p>Solve comparison, sum and different problems using information presented in bar charts, pictograms tables and other graphs.</p>	<p>Solve Problems</p> <p>Solve comparison, sum and different problems using information presented in a line graph.</p>	<p>Solve Problems</p> <p>Calculate and interpret the mean as an average.</p>
Vocabulary			Count, tally, sort, vote, graph, block graphs, pictogram, represent, group, set, list, table, label, title, most popular, most common, least popular, least common	chart, bar chart, frequency table, Carroll diagram, Venn diagram, axis	survey, questionnaire, data	bar line chart, line graph	pie chart, mean (mode, median, range as estimates for this) statistics, distribution	