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	Place Value						
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Counting	ELG Numbers: Have a deep understanding of number to 10, including the composition of each number ELG Numerical Patterns: Verbally count beyond 20, recognising the pattern of the counting system	Count to and across 100, forward and backwards, beginning with 0 or 1, or from any given number. Count numbers to 100 in numeral; count in multiplies of two, fives and tens.	Count in steps of 2, 3 and 5 from 0, and in tens from any number, forward 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.	Count forward or backwards in steps of power of 10 for any given number up to 1,000,000. Count forwards and backwards with positive and negative numbers, including through zero.	
Representation	ELG Numbers: Subitise (recognise quantities without counting) up to 5. ELG Numerical Patterns: Explore and represent patterns within numbers up to 10, including evens and odds	Identify and present numbers using objects and pictorial representations. Read and write numbers up to 100 in numerals. Read and write numbers from 1 to 20 in numerals and words.	Read and write numerals to at least 100 in numerals and words. Identify, represent and estimate numbers using different representation including the number line.	Identify, represent and estimate numbers using different representation. Read and write numbers up to 1000 in numerals and in words.	Identify, represent and estimate numbers using different representation. 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.	Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit. Read Roman numerals to 1000 (M) and recognise years with the Roman numeral.	Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit.

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Use Place Value and compare	ELG Numerical Patterns: Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.	Given a number identify one more and one less.	Recognise the place value of each digit in a two-digit number (tens, ones). Compared and order numbers from 0 up to 100; Use < > and = sign	Recognise the place value of each digit in a three-digit numbers (Hundreds, tens and ones). Compare and order numbers up to 1000.	Find 1000 more or less than a given number. Recognise the place of each digit in a four-digit number (thousands, hundreds, tens and ones). Order and compare numbers beyond 1000.	Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit.	Read, write, order and compare numbers to at least 10,000,000 and determine the value of each digit.
Problems and rounding			Use place value and number facts to solve problems.	Solve number problems and practical problems involving these ideas.	Round any number to the nearest 10, 100 or 1000. Solve number and practical problems that invoice all of the above and with increasingly large positive numbers.	Interpret negative numbers in context. Round any numbers up to 1,000,000 to the nearest 10, 100, 1000, 10,00 and 100,000. Solve number problems and practical problems that involve all the above.	Round any whole number to a required degree of accuracy. Use negative numbers in context and calculate intervals across zero. Solve number problems that involve all the above.

Addition and Subtractions

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	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Recall, representation and Use	ELG Numbers: Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10	Read, write and interpret mathematical statements involving addition (+) subtractions (-) 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 the addition of two numbers can be done in any order (commutative) and subtractions of one number from another cannot. Recognise and use inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	Estimate the answer to a calculation and use inverse operations to check answers.	Estimate and use inverse operations to check answers to a calculation.	Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.	
Calculations		Add and subtract onedigit and two-digit numbers to 20, including zero.	Add and subtract numbers including concrete and pictorial representations and mentally, including: -Two-digit number by ones; -Two by two-digit - 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 the written formal method of columnar addition and subtraction.	Add and subtract numbers with up to fourdigits using the formal written methods of columnar addition and subtraction where appropriate.	Add and subtract whole numbers with more than four digits, including using formal written methods (columnar). Add and subtract numbers mentally with increasingly large numbers.	Perform mental calculation, including with mixed operations and large numbers. Use their knowledge of the order of operations to carry out calculations involving the four operations.

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Solve problems		Solve one-step problems that involve addition and subtract, using concrete and pictorial representations, and missing number problems such as 7 = __ - 9.	Solve problems with addition and subtract. Using concrete and pictorial representations, including those involving numbers, quantities and measures. Applying their knowledge of mental and written methods.	Solve problems, including missing numbers problems, using number facts, place value and more complex addition and subtractions.	Solve addition and subtraction two-steps problems in context. Deciding which operations and methods to use and why.	Solve addition and subtraction multi-step problems in context, 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 equal sign.	Solve addition and subtraction multi-step problems in context, deciding which operations and methods to use and why.

Multiplication and division

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	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Recall, representation and Use	ELG Numerical Patterns: Automatically recalls double facts and how quantities can be distributed equally.		Reach and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including using 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 x 12. Use place value, known and derived facts to multiply and divide mentally, including by 0 and 1; dividing by 1; multiplying together three numbers. Recognise and use factor pairs and commutativity in mental calculations.	Identify multiplies and factors, including finding all factor pairs of a number and common factor pairs of a number and common factor pairs 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. Recognise and use squared and cubed numbers and the notation for squared (^{2}) and cube (^{3})	Identify common factors, common multiples and prime numbers. Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.
Multiplication facts		Multiplication facts Autumn – 2's Spring – 10's Summer – 5's	Autumn – 2, 5 and 10 (inverse) Spring – 3's Summer – 4's	Autumn – 6's Spring – 8's Summer – 9's	Autumn – 7's Spring – 12's Summer – 11's	Consolidate 12x12 and inverse facts	Consolidate 12x12 and inverse facts

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Calculations			Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs.	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 progressing to formal written methods.	Multiply two-digit and three-digit numbers by one-digit number using the formal written layout.	Multiply numbers up to four digits by a one digit or two-digit number using the formal written method, including long multiplication for two digits. Multiply and divide numbers mentally drawing upon know facts. Divide numbers up to four digits by a one digit number using the formal written method of short division and interpreting remainders appropriately for the context. Multiply and divide numbers and those involving decimals by 10, 100 and 1000.	Multiply multi-digit numbers up to 4 digits by a 2-digit whole number using the formal written method of long multiplication. Divide numbers up to 4-digits by a 2digit whole numbers using the formal written method of long division, and interpret remainders as whole number remainder, fractions or by rounding, as appropriate for the context. Divide numbers up to 4 digits by a 2 digit number using the formal written method of short division where appropriate, interpreting remainders according to the context. Perform mental calculation, including with mixed operations and large numbers.

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Solve Problems		Solve one-step problems involving multiplications and division, by calculating the answer using concrete objects, pictorial representations, and arrays with the support of the teacher.	Solve problems involving multiplications and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in context.	Solve problems including missing number problems, involving multiplication and division including positive integers scaling problems, in which *n* objects are connected to *m* objects.	Solve problems involving multiplying and adding, including using the distributive law to multiply two digits by one-digit integer scaling problems and harder correspondence problems such as *n* objects are connected to *m* objects.	Solve problems involving multiplying 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 problem solving involving simple rates.	Solve problems involving addition, subtractions, multiplication and division. Autumn 1
Combined operations						Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equal sign.	Use their knowledge of the order of operations to carry out calculations involving the four operations.

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Fractions							
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
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, find, name and write fractions 1/3, ¼, 2/4 and ¾ of a length, shape, set of objects or quantity.	Count up and down in tenths; recognise that tenths derives 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 nonunit fractions with small denominators. Recognise and use fractions as numbers, unit fractions and nonunit fractions with small denominators.	Count up and down in hundredths; recognise that hundredths arose when dividing an object by 100 and dividing tenths by ten.	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 e/g/ 2/5 + 4/5 = 6/5 or 1 1/5	
Compare			Recognise the equivalence of 2/4 and ½	Recognise and show, using diagrams, equivalent fractions with small denominators. Compare and order unit fractions and fractions with the same denominator.	Recognise and show, using diagrams, families of common equivalent fractions.	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. Compare and order fractions, including fractions > 1

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Calculations			Write simple fractions e.g. ½ of 6 = 3	Add and subtract fractions with the same denominator with one whole e.g. 5/7 + 1/7 = 6/7	Add and subtraction fractions with the same denominator.	Add and subtraction 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.	Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. Multiply simple pairs of proper fractions writing the answers in its simplest form [for $\frac{1}{4} \times \frac{1}{2} =$ Divide proper fractions by whole numbers [for $\frac{1}{3} \div 2 = \frac{1}{6}$
Solve problems				Solve problems that involve all of the above	Solve problems involving increasingly harder fractions to calculate quantifies and fractions to divide quantities including non-unit fractions where the answer is a whole number.		

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Decimals							
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Recognise and Write					Recognise and write decimal equivalents of any number of tenths or hundredths. Recognise and write decimal equivalents to $\frac{1}{4}, \frac{1}{2}, \frac{3}{4}$	Read and write decimal numbers as fractions [for example, 0.71 = 71/100. Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.	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 numbers with the same number of decimal places up to two decimal 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 decimals places.	
Calculations and Problems					Find the effect of dividing a one- or twodigit number by 10 and 100, identifying the value of the digits in the answers as ones, tenths and hundredths.	Solve problems involving numbers up to three decimal places.	Multiply and divide 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

							answers has two decimal places. Solve problems which require answers to be rounded to specified degrees of accuracy.

Fractions, decimals and percentages							
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

					Solve simple measure and money problems involving fractions and decimals to two decimal places.	Recognise the per cent symbol (%) and understand the per cent relates to 'numbers parts per hundred' and write percentages as a fraction with a denominator of 10, and as a decimal solve problems which requires knowing percentages and decimal equivalents of ½, ¼, 1/5, 2/5, 4/5 and those fractions with a denominator of multiple of 10 or 25.	Associated a fraction with division and calculate decimal fraction equivalent. [for example, 0.375] for a simple fractions [for example 3/8]. Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.

Ratio and Proportion							
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
							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 percentage 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 multiplies.

Algebra Note: although algebraic notations is not introduced until Y6, algebraic thinking starts much earlier as exemplified by the 'missing number' objectives							
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

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		Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing numbers problems such as 7 = __ - 9.	Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	Solve problems including missing number problems			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.
Measurement							

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	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Using measure	Enjoys tackling problems involving prediction and discussion of comparisons of length, weight or capacity, paying attention to fairness and accuracy Becomes familiar with measuring tools in everyday experiences and play	Compare, describe and solve practical problems for: -Length and height [for example, short/long, 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]. -Time [for example quicker, slower, earlier, later]. Measure and begin to record the following: -Length and heights -Mass / weight -Capacity and volume -Time [hours, seconds and minutes]	Choose and use appropriate standards units to estimate and measure length / height in any direction (m/cm); mass (g/kg); capacity (l/ml); temperature (°C) 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 =	Measure, compare, add and subtract lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)	Convert between different units of measure [for example kilometres to metres, hours to minutes]. Estimate, compare and calculate different measures.	Convert between different units of metric measure (for example km / m, cm/m/mm, g/km, l/ml). Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. Use all four operations to problems involving measure, for example length, mass, volume, money using decimals notation, including scaling.	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 to up to three decimal places. Convert between miles and kilometres.
Money	Uses exchanges in role play	Recognise and know the value of different denominations of coins and notes.	Recognise and use the symbols for pounds (£) and pence (p); combine amounts to make a particular value. Find different combinations of coins	Add and subtract amounts of money to give change, using both £ and p in practical context.	Estimate, compare and calculate different measures including money in pounds and pence.	Use all four operations to solve practical measures e.g. money.	

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			equal to the same amount of money. Solve simple problems in a practical context involving addition and subtractions of money of the same unit, involving giving change away.				
Time	Is increasingly able to order and sequence events using everyday language related to time Beginning to experience measuring time with timers and calendars	Sequence events in chronological order using language e.g. before, after, next, first, today, tomorrow. Recognise and use language relating to dates including days of the week, weeks, months and year. Tell the time to the hour and half past the hour and draw the hands on the clock face to show these times.	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 the clock face to show these times. Know the number of minutes in an hour and the number of hours in a day.	Tell and write the time from an analogue clock, using Roman numerals from I to XII and 12-hour and 24 hour clocks. Estimate and read time with increasing accuracy to the nearest minute. Record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m. / p.m. morning, afternoon, noon, midnight. Know the number of seconds in a minute, minutes and the number of days in a year, including a leap year. Compare durations of events e.g. to compare how long an event takes place.	Read, write and convert time between analogue and digital 12- and 24-hour clocks. Solve problems involving converting hours to minutes, minutes to seconds, years to months, weeks to days.	Solve problems involving converting between units of time.	Use, read, write and convert between standard units, converting measurements of time from smaller unit of measure to larger unit of measure and vice versa.

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Perimeter, Area and Volume				Measure the perimeter of simple 2d 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 a composite rectilinear figure in centimetres and metres. Calculate and compare the area of rectangles (including squares) and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of an irregular shape. Estimate the volume e.g. using $1cm^3$ block to build cuboids and capacity.	Recognise that shapes with the same area can have different perimeters and vice versa. Recognise when it is possible to use formulae to calculate the area of shapes and volume. Calculate the area of parallelograms and triangles. Calculate, estimate and compare volume of cubes and cuboids using standard units including cubic centimetre (cm^3) and cubic metres (m^3) and extending to other units e.g. mm^3

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Geometry							
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
2D shapes	Uses informal language and analogies, (e.g. heart-shaped and hand-shaped leaves), as well as mathematical terms to describe shapes Enjoys composing and decomposing shapes, learning which shapes combine to make other shapes	Recognise and name common 2d shapes e.g. rectangles (including squares), circles and triangles.	Identify and describe the properties of 2d shapes, including the number of sides and lines of symmetry in a vertical line. Identify 2d shapes on the surface of 3d shapes e.g. circle on a cylinder, triangle on a pyramid. Compare and sort common 2d shapes and everyday objects.	Draw 2d shapes.	Compare and classify geometric shapes including quadrilateral and triangles, based on their properties and size. Identify lines of symmetry in 2d shapes presented in different orientations.	Distinguish between regular and irregular polygons based on the reasoning about equal sides and angles. Use the properties of rectangles to deduce related facts and find missing lengths and angles.	Draw 2d 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.
3D shapes	Uses own ideas to make models of increasing complexity, selecting blocks needed, solving problems and visualising what they will build	Recognise and name common 3D shapes e.g. cuboids (including cubes) pyramids and spheres.	Recognise and names common 3d shapes e.g. cuboids (including cubes) pyramids and spheres. Compare and sort common 3d shapes and everyday objects.	Make 3d shapes using modelling materials. Recognise 3d shapes in different orientations and describe them.		Identify 3d shapes, including cubes and other cuboids, from 2d representation.	Recognise, describe and build simple 3d shapes, including making nets.

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Angles and Lines				Recognise angles as a property of shape or a description of a turn. Identify right angles recognises that two right angles makes a half-turn, three makes a three-quarter turns	Identify acute and obtuse angles and compare and order angles up to two right angles by size. Identify lines of symmetry in 2D shapes	Know angles are measured in degrees; estimate and compare acute, obtuse and reflex angles. Draw given angles and measure them in degrees.	Find unknown angles in any triangle, quadrilateral and regular polygons. Recognise angles where they meet at a point, are on a straight line or are vertically

				and four makes a full turn. Identify whether angles are greater than or less than a right angles. Identify horizontals and vertical lines and pairs of perpendicular and parallel lines.	presented in different orientations. Complete a simple symmetrical figures with respect to a specific line of symmetry.	Identify: -angles at a point and one whole turn (total 360°) -angles at a pint on a straight line and ½ turn (total 180º). -other multiples of 90º	opposite and find missing angles.

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Position and direction	Uses spatial language, including following and giving directions, using relative terms and describing what they see from different viewpoints Investigates turning and flipping objects in order to make shapes fit and create models; predicting and visualising how they will look (spatial reasoning) May enjoy making simple maps of familiar and imaginative environments, with landmarks	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, directions and movement, including movement in a straight line and distinguishing between rotations as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).		Describe position on a 2d grid as coordinates in the first quadrant. Describe movement between position as translation of a given unit to the left / right and up / down. Plot specified points and draw sides to complete a given polygon.	Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.	Describe positions on the full coordinate grid (all four quadrants). Draw and translate simple shapes on the coordinate's plane, and reflect them in the axes.
Statistics							
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Present and Interpret		Interpret and construct simple pictograms, tally diagrams and simple tables.	Interpret and present data using bar charts and pictograms and tables.	Interpret and present discrete and continuous data using appropriate graphical methods including bar charts and time graphs.	Complete, read and interpret information tables, including timetables.	Interpret and construct pie chart and line graphs and use these to solve problems.	

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Solve problems			Ask and answer simple questions by counting numbers of objects in each category and sorting the categories by quantity. Ask and answer questions about totalling and comparing categorical data.	Solve one-step and two-step questions (for example – how many more? How many fewer?) Using the information presented in scaled bar charts and pictograms and tables.	Solve comparison, sum and difference problems using information present in bar charts, pictograms, tables and other graphs.	Solve comparison, sum and difference problems using information present in a line graphs.	Calculate and interpret the mean as an average.