Year 4

Counting, properties of numbers and number sequences	Place Value, Ordering and Rounding	Fractions including Decimals	Understanding addition and subtraction
Count backwards through 0 to include negative numbers Recognise and extend number sequences formed by counting from any number in steps of constant size, extending beyond zero when counting back: for example, count on in steps of 25 to 500, and then back to, say, –100. Recognise odd and even numbers up to 1000, and some of their properties, including the outcome of sums or differences of pairs of odd/ even numbers. Recognise multiples of 2, 3, 4, 5 and 10, up to the tenth multiple. Practice counting using simple fractions and decimals, both forwards and backwards.	**Count in multiples of 6, 7, 9, 25 and 100.** **Order and compare numbers beyond 1000** Read and write the vocabulary of comparing and ordering numbers. Use symbols correctly, including less than (<), greater than (>), equals (=). Read and write whole numbers to at least 10,000 in figures and words Give one or more numbers lying between two given numbers and order a set of whole numbers less than 10000. **Identify, represent and estimate numbers using different representations.** **Find 1000 more or less than a given number** **Recognise the place value of each digit in a four-digit number.** Partition numbers into thousands, hundreds, tens and ones. Multiply or divide any integer up to 1000 by 10 (whole-number answers), and understand the effect. **Round any number less than 10000 to the nearest 10 100 or 1000.** **Read and write Roman Numeral to 100** **Solve number and practical problems that involve all of the above and with increasingly large positive numbers.**	**Recognise and show the equivalence of simple fractions (e.g. fractions equivalent to ½ ¼ or ¾) using diagrams and families of equivalents.** **Recognise and write decimal equivalents to 1/4, 1/2 and 3/4** Recognise the equivalence between the decimal and fraction forms of one half, one quarter, three quarters, and tenths such as 0.3. **Count up and down in hundredths; recognise that hundredths arise when dividing objects by 100 and dividing tenths by 10.** **Solve problems with 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 to any number of tenths or hundredths** and use it in context. For example: amounts of money; convert a sum of money such as £13.25 to pence, or a length such as 125 cm to metres; round a sum of money to the nearest pound. **Find the effect of dividing and one or two digit number by 10 and 100, identifying the value of the digits in the answers 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.** Recognise simple fractions that are several parts of a whole, such as 2⁄3 or 5⁄8, and mixed numbers. Identify two simple fractions with a total of 1 (e.g. 3⁄ 10 and 7/10). Order simple fractions: for example, decide whether fractions such as 3/8 or 7/10 are greater or less than one half. Begin to relate fractions to division and find simple fraction such as 1/2, 1/3, 1/4, 1/5, 1/10 of numbers, quantities or shapes	Consolidate understanding of relationship between + and –. Understand the principles (not the names) of the commutative and associative laws as they apply or not to addition and subtraction

Year 4

Rapid recall of addition and subtraction facts and Pencil and paper procedures (+ and -)	Understanding multiplication and division	Reasoning and generalising about numbers or shapes/ money and measures	Statistics
Consolidate knowing by heart:addition and subtraction facts for all numbers to 20. Derive quickly:all number pairs that total 100 (e.g. 62 + 38, 75 + 25, 40 + 60); all pairs of multiples of 50 with a total of 1000 (e.g. 850 + 150). Mentally add/subtract 1, 10, 100 or 1000 to/ from any integer, and count on or back in tens, hundreds or thousands from any whole number up to 10000. **Pencil and paper procedures (+ and -)** Develop and refine mental addition and subtraction methods with increasingly large numbers to aid fluency. (See mental strategies document) **Add and subtract numbers with up to four digits using the formal written methods of column addition and subtraction, where appropriate.** **Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.** .	Extend understanding of the operations of x and ÷, and their relationship to each other and to + and -. Understand the principles (not the names) of the commutative, associative and distributive laws as they apply to multiplication. **Rapid recall of multiplication and division facts** **Know: All multiplication and division facts for all tables up to 12 x 12** **Use place value, known and derived facts to divide and multiply mentally, including by 0 and 1; dividing by 1; multiplying together 3 numbers.** **Recognise and use factor pairs in mental calculations** (divide by 2 and then 3 to divide by 6, or multiply by 3 then 10 to multiply by 30) **and commutativity in mental calculations** Begin to know: multiplication facts for 6, 7, 8 and 9 times-tables. Derive quickly: doubles of all whole numbers to 50 (e.g. 38 + 38, or 38 x2); doubles of multiples of 10 to 500 (e.g. 460 x 2); doubles of multiples of 100 to 5000 (e.g. 3400 x 2); and the corresponding halves 1 (e.g. 74 ÷ 2, 1/2 of 420, half of 3800). **Pencil and paper procedures (x and ÷)** To approximate first. Use formal and informal pencil and paper methods to support, record or explain multiplications and divisions. **Multiply two-digit and three-digit numbers by a one-digit number using formal written layout** Multiply and divide using formal and informal written methods, including partitioning and grouping.	**Solving Problems - Making Decisions** Choose and use appropriate number operations and appropriate ways of calculating (mental, mental with jottings, pencil and paper) to solve problems. Solve problems involving multiplying and adding, including using the distributive law to multiply TU x U, integer scaling problems. Utilise problem solving strategies using all four operations, including finding all possibilities, working backwards, finding rules and describing patterns, and making a table or list. **Reasoning or generalising about numbers or shapes** Explain methods and reasoning about numbers orally and in writing. Solve mathematical problems or puzzles, recognise and explain patterns and relationships, generalise and predict. Suggest extensions by asking 'What if…?' Make and investigate a general statement about familiar numbers or shapes by finding examples that satisfy it. **Problems involving 'real life', money and measures:** Use all four operations to solve word problems involving numbers in 'real life', money and measures (including time), using one or more steps, including converting pounds to pence and metres to centimetres and vice versa. Addition and subtraction of two numbers in money calculations (for example, £7.85 ± £3.49).	**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, table and other graphs.** Solve a problem by collecting quickly, organising, representing and interpreting data in tables, charts, graphs and diagrams, including those generated by a computer, for example: tally charts and frequency tables; pictograms – symbol representing 2, 5, 10 or 20 units; bar charts – intervals labelled in 2s, 5s, 10s or 20s; Venn and Carroll diagrams (two criteria).

Year 4

Measurement	Geometry - properties of shapes -	Geometry - position and direction	Checking results of calculations
Convert between different units of measure (km to m, hour to minute, g to kg etc). Use, read and write standard metric units (km, m, cm, mm, kg, g, l, ml), including their abbreviations. Know the equivalent of one half, one quarter, three quarters and one tenth of 1 km, 1 m, 1 kg, 1 litre Suggest suitable units and measuring equipment to estimate or measure length, mass or capacity. Record estimates and readings from scales to a suitable degree of accuracy. **Estimate, compare and calculate different measures, including money in pounds and cm and m. Relate to decimals and hundredths.** **Measure and calculate the perimeter of rectilinear figure (including squares) in cm and m** Represent and understand perimeter algebraically as 2(a+b) where a and b are the dimensions in the same unit. **Find the area of rectilinear shapes by counting squares and then by using formula. A= L x W** **Read, write and convert between analogue and digital 12 hour and 24 hour clocks** **Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.**	Describe and visualise 3-D and 2-D shapes, including the tetrahedron and heptagon. **Classify and compare geometric shapes, including quadrilaterals (parallelogram, rhombus, trapezium) and triangles (isosceles, equilateral, scalene) based on their properties and sizes** **Identify lines of symmetry in 2-D shapes presented in different orientations.** **Complete a simple symmetric figure with respect to a line of symmetry.** **Identify acute and obtuse angles in and compare and order angles up to two right angles by size.** Begin to know that angles are measured in degrees and that: one whole turn is 360° or 4 right angles; a quarter turn is 90° or one right angle; half a right angle is 45°. Start to compare and order angles and compare lengths and angles to decide if a polygon is regular or irregular.	**Describe position on a 2D grid as co-ordinates in the first quadrant.** **Describe movements between position as translations.** **Plot specified points and draw sides to complete a given polygon.** Draw a pair of axes in one quadrant, with equal scales and integer labels. Use the eight compass directions N, S, E, W, NE, NW, SE, SW. Make and measure clockwise and anti-clockwise turns: for example, from SW to N, or from 4 to 10 on a clock face.	**Estimate and use inverse operations to check the results to a calculation.** Check the sum of several numbers by adding in reverse order. Check with an equivalent calculation. Use knowledge of sums or differences of odd/ even numbers.