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| **Number: Place Value** |
| **Counting**   * interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero * count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000   **Comparing Numbers**   * read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit   **Reading and Writing Numbers (including Roman Numerals)**   * 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 written in Roman numerals.   **Understanding Place Value**   * read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit * *recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents – (copied from Fractions)*   **Rounding**   * round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 * *round decimals with two decimal places to the nearest whole number and to one decimal place – (copied from Fractions)*   **Problem Solving**   * solve number problems and practical problems that involve all of the above |
| **Number: Addition and Subtraction** |
| **Mental Calculation**   * add and subtract numbers mentally with increasingly large numbers   **Written Methods**   * add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)   **Inverse Operations, Estimating and Checking Answers**   * use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy   **Problem Solving**   * solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. |
| **Number: Multiplication and Division** |
| **Multiplication and Division Facts**   * *count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 – (copied from Number and Place Value)*   **Mental Calculation**   * multiply and divide numbers mentally, drawing upon known facts * multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000   **Written Calculation**   * 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 * 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   **Properties of numbers: Multiples. Fatprs, Primes, Square and Cube Numbers**   * identify multiples and factors, including finding all factor pairs of a number, and common factors of 2 numbers * know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers * establish whether a number up to 100 is prime and recall prime numbers up to 19 * recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³)   **Problem Solving**   * solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes * solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign * solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates |
| **Number - Fractions** |
| **Recognising Fractions**   * recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents   **Comparing Fractions**   * compare and order fractions whose denominators are all multiples of the same number   **Comparing Decimals**   * read, write, order and compare numbers with up to three decimal places   **Rounding Including Decimals**   * round decimals with two decimal places to the nearest whole number and to one decimal place   **Equivalence (Including Fractions, Decimals and Percentages)**   * identify, name and write equivalent fractions of a given fraction, represented visually,including tenths and hundredths * read and write decimal numbers as fractions [for example, 0.71 =71⁄100] * recognise and use thousandths and related them to tenths, hundredths and decimals equivalents. * 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 fraction.   **Addition and Subtraction of Fractions**   * add and subtract fractions with the same denominator and denominators that are multiples of the same number * 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,2⁄5+4⁄5=6⁄5= 11⁄5]   **Multiplication and Division of Fractions**   * multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams   **Problem Solving**   * solve problems involving number up to three decimal places * solve problems which require knowing percentage and decimal equivalents of 1⁄2, 1⁄4,1⁄5, 2⁄5 and those fractions with a denominator of a multiple of 10 or 25. |
| **Algebra** |
| **Equations**   * *use the properties of rectangles to deduce related facts and find missing lengths and angles – (copied from Geometry: Properties of shapes)* |
| **Measurement** |
| **Comparing and Estimating**   * calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes * estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water]   **Measuring and Calculating**   * use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling. * 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 units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes * *recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³) – (copied from Multiplication and Division)*   **Telling the time**   * solve problems involving converting between units of time   **Converting**   * convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) * solve problems involving converting between units of time * understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints |
| **Geometry: Properties of Shapes** |
| **Identifying shapes and their properties**   * identify 3-D shapes, including cubes and other cuboids, from 2-D representations   **Drawing and Contructing**   * draw given angles, and measure them in degrees (°)   **Comparing and classifying**   * use the properties of rectangles to deduce related facts and find missing lengths and angles * distinguish between regular and irregular polygons based on reasoning about equal sides and angles.   **Angles**   * know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles * identify: * angles at a point and one whole turn (total 360°) * angles at a point on a straight line and ½ a turn (total 180°) * other multiples of 90° |
| **Geometry: Position and Direction** |
| **Position, direction and movement**   * 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. |
| **Statistics** |
| **Interpreting, constructing and presenting data**   * complete, read and interpret information in tables, including timetables.   **Solving Problems**   * solve comparison, sum and difference problems using information presented in a line graph. |