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| **Number: Place Value** |
| **Counting**   * use negative numbers in context, and calculate intervals across zero   **Comparing Numbers**   * read, write, order and compare numbers up to 10 000 000 and determine the value of each digit   **Reading and Writing Numbers (including Roman Numerals)**   * read, write, order and compare numbers up to 10 000 000 and determine the value of each digit   **Understanding Place Value**   * read, write, order and compare numbers up to 10 000 000 and determine the value of each digit   **Rounding**   * round any whole number to a required degree of accuracy * *Solve problems which require answers to be rounded to specified degrees of accuracy – (copied from fractions)*   **Problem Solving**   * solve number problems and practical problems that involve all of the above. |
| **Number: Addition and Subtraction** |
| **Mental Calculation**   * perform mental calculations, including with mixed operations and large numbers * use their knowledge of the order of operations to carry out calculations involving the four operations   **Inverse Operations, Estimating and Checking Answers**   * use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.   **Problem Solving**   * solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why * solve problems involving addition, subtraction, multiplication and division |
| **Number: Multiplication and Division** |
| **Mental Calculation**   * perform mental calculations, including with mixed operations and large numbers * *associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3⁄8] – (copied from Fractions)*   **Written Calculation**   * 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 * *use written division methods in cases where the answer has up to two decimal places – (copied from Fractions)*   **Properties of numbers: Multiples. Fatprs, Primes, Square and Cube Numbers**   * identify common factors, common multiples and prime numbers * *use common factors to simplify fractions; use common multiples to express fractions in the same denomination – (copied from Fractions)*   **Order of Operations**   * use their knowledge of the order of operations to carry out calculations involving the four operations   **Inverse Operations, Estimating and Checking Answers**   * use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.   **Problem Solving**   * solve problems involving addition, subtraction, multiplication and division * solve problems involving unequal sharing and grouping using knowledge of fractions and multiples – (copied from Ratio and Proportion) |
| **Number - Fractions** |
| **Recognising Fractions**   * compare and order fractions, including fractions >1   **Comparing Decimals**   * 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   **Rounding Including Decimals**   * solve problems which require answers to be rounded to specified degrees of accuracy   **Equivalence (Including Fractions, Decimals and Percentages)**   * use common factors to simplify fractions; use common multiples to express fractions in the same denomination * associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3⁄8] * recall and use equivalences between simple fractions, decimals and percentages including in different contexts.   **Addition and Subtraction of Fractions**   * add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions   **Multiplication and Division of Fractions**   * multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, ¼ × ½ = 1⁄8] * multiply one-digit numbers with up to two decimal places by whole numbers * divide proper fractions by whole numbers [for example, 1⁄3 ÷ 2 = 1⁄6]   **Multiplication and Division of Decimals**   * multiply one-digit numbers with up to two decimal places by whole numbers * multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places * identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 * and 1000 where the answers are up to three decimal places * associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction * (e.g. 3/8) * use written division methods in cases where the answer has up to two decimal places |
| **Ratio and Proportion** |
| * 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 use 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 |
| **Algebra** |
| **Equations**   * express missing number problems algebraically * find pairs of numbers that satisfy number sentences involving two unknowns * enumerate possibilities of combinations of two variables   **Formulae**   * use simple formulae   **Sequences**   * generate and describe linear number sequences |
| **Measurement** |
| **Comparing and Estimating**   * calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units [for example, mm3 and km3]   **Measuring and Calculating**   * solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate * recognise that shapes with the same areas can have different perimeters and vice versa * calculate the area of parallelograms and triangles * calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units [e.g. mm3 and km3]. * recognise when it is possible to use the formulae for area and volume of shapes   **Converting**   * 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 * solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate * convert between miles and kilometres |
| **Geometry: Properties of Shapes** |
| **Identifying shapes and their properties**   * recognise, describe and build simple 3-D shapes including making nets * illustrate and name parts of circle, including radius, diameter and circumference and know that the diameter is twice the radius * **Drawing and Contructing** * draw 2-D shapes using given dimensions and angles * recognise, describe and build simple 3-D shapes including making nets   **Comparing and classifying**   * compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons   **Angles**   * recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. |
| **Geometry: Position and Direction** |
| **Position, direction and movement**   * describe positions on the full coordinate grid (all four quadrants) * draw and translate simple shapes on the coordinate plane, and reflect them in the axes. |
| **Statistics** |
| **Interpreting, constructing and presenting data**   * interpret and construct pie charts and line graphs and use these to solve problems   **Solving Problems**   * calculate and interpret the mean as an average |