**Maths Long Term Planning Year 6**

|  |  |  |
| --- | --- | --- |
| **Term:** | **Year Group/Teacher:** | Class: |
| ***Objectives: End-of-year expectations***  ***Number and calculations***  Pupils should be taught to:   * read, write, order and compare numbers up to 10 000 000 and determine the value of each digit * 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 * 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 * perform mental calculations, including with mixed operations and large numbers * identify common factors, common multiples and prime numbers * use their knowledge of the order of operations to carry out calculations involving the four operations * 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 * use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. * 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, ¼ x ½ = 1/8 * divide proper fractions by whole numbers [for example, 1/3 divided by 2 = 1/6 * associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 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 * solve problems which require answers to be rounded to specified degrees of accuracy * recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. | | |
| **Objectives: End-of-year expectations**  Measure and Geometry  Pupils should be taught to:   * 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 * 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 units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units [for example, mm3 and km3]. * 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 * 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) * draw and translate simple shapes on the coordinate plane, and reflect them in the axes. | | |
| Algebra  Pupils should be taught to:   * 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. | | **Ratio and Proportion**  Pupils should be taught to:   * 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. |
| Statistics  Pupils should be taught to:   * interpret and construct pie charts and line graphs and use these to solve problems * calculate and interpret the mean as an average | |