**Year 6 Maths New Curriculum Objectives**



**NUMBER**

**Number and Place Value**

* 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

**Addition, Subtraction, Multiplication and Division**

* 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

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* 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, levels of accuracy.

**Fractions (including decimals and percentages)**

* 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 (e.g. 1/4 × 1/2 = 1/8)
* divide proper fractions by whole numbers (e.g. 1/3 ÷ 2 = 1/6 )
* associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3/8)
* 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
* 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.

**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 (e.g. of measures) 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.

**ALGEBRA**

* express missing number problems algebraically
* use simple formulae expressed in words
* generate and describe linear number sequences
* find pairs of numbers that satisfy number sentences involving two unknowns
* enumerate all possibilities of combinations of two variables.

**MEASUREMENT**

* 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 centimetre cubed (cm3) and cubic metres (m3), and extending to other units such as mm3 and km3.

**GEOMETRY**

**Properties of Shapes**

* 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

**Position and Direction**

* 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.

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| **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. | |