Stage 6 attainment targets

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 place value

Addition, Subtraction, Multiplication and Division

- Multiply and divide numbers up to 4 digits by a 2-digit whole number using the formal written method of long and short multiplication/division and interpret remainders as whole number remainders, fractions, or by rounding as appropriate for the context
- Identify common factors, common multiples and prime numbers.
- Use their knowledge of the order of operations to carry out calculations involving the four operations, including mental calculations with mixed operations and large numbers applying this to solve problems and use estimations to check answers to determine, in the context of a problem, an appropriate degree of accuracy.
- Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

Fractions

- Use common factors to simplify fractions
- Use common multiples to express fractions in the same denomination and be able to 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 proper fractions and simplify the answer (e.g. ¼ x ½ = ⅛). Divide proper fractions by whole numbers (e.g. ⅓ ÷ 2 = ⅙).
- Identify the value of each digit to three decimal places
- Multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places
- Solve problems which require answers to be rounded to specified degrees of accuracy.
- 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.
- Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts and associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3/8)

Ratio & Proportion

- 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 the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.
- 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.

Measure

- 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 km.
- Use, read, write & convert between standard units of measure, converting length, mass, volume & time from smaller to larger units, and vice versa, using decimal notation to up to 3 decimal places.
- Recognise that shapes with the same areas can have different perimeters and vice versa
- Calculate the area of parallelograms and triangles. Recognise when it is possible to use formulae for area and volume of shapes.
- Calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm2) and cubic metres (m3), and extending to other units.

Geometry

- 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 & 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.

Statistics

- Interpret and construct pie charts and line graphs and use these to solve problems.
- Calculate and interpret the mean as an average.