Mathematics Year 6

Number and Place Value
1. I can read, write, order and compare numbers up to 10 000 000 and determine the value of each digit.
2. I can round any whole number to a required degree of accuracy.
3. I can use negative numbers in context, and calculate intervals across zero.
4. I can identify the value of each digit in numbers given to three decimal places.
5. I can explore the order of operations using brackets; for example, 2 + 1 x 3 = 5 and (2 + 1) x 3 = 9.

Addition and Subtraction, Multiplication and Division
1. I can multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.
2. I can multiply one-digit numbers with up to two decimal places by whole numbers.
3. I can 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.
4. I can divide numbers up to 4 digits by a one digit whole number using the formal written method of short division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.
5. I can use written division methods in cases where the answer has up to two decimal places.
6. I can identify common factors, common multiples and prime numbers.
7. I can perform mental calculations, including with mixed operations and large numbers.
8. I can solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
9. I can use my knowledge of the order of operations to carry out calculations involving the four operations.
10. I can explore the order of operations using brackets; for example, 2 + 1 x 3 = 5 and (2 + 1) x 3 = 9.
11. I can use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.
12. I can multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places.
NOTE: Please see additional ARE sheet for times tables.

Fractions, Decimals and Percentages
1. I can use common factors to simplify fractions; use common multiples to express fractions in the same denomination.
2. I can compare and order fractions, including fractions > 1.
3. I can add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.
4. I can multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, 1/4 x 1/2 = 1/8].
5. I can divide proper fractions by whole numbers.
6. I can associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8]
7. I can recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.

Ratio and Proportion
1. I can solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.
2. I can solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison.
3. I can solve problems involving similar shapes where the scale factor is known or can be found.
4. I can solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.

Measure
1. I can solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.
2. I can 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 up to three decimals places.
3. I can convert between mile and kilometres.
4. I can recognise that shapes with the same area can have different perimeters and vice versa.
5. I can calculate using formulae for area, including parallelograms and triangles and volume of shapes, including cubes and cuboids.

Geometry
1. I can draw 2-D shapes using given dimensions and angles.
2. I can recognise, describe and build simple 3-D shapes, including making nets.
3. I can compare and classify geometric shapes based on their properties and sizes and find unknown angles and lengths in any triangles, quadrilaterals, and regular polygons.
4. I can illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.
5. I can recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.
6. I can describe positions on the full coordinate grid (all four quadrants).
   I can draw, translate, reflect shapes on the coordinate planes, and reflect them in axes.

Statistics
1. I can interpret and construct pie charts and line graphs and use these to solve problems.
2. I can calculate and interpret mean as an average.

Algebra
1. I can use simple formulae.
2. I can generate and describe linear number sequences.
3. I can express missing number problems algebraically.
4. I can find pairs of numbers that satisfy an equation with two unknowns.