END OF YEAR EXPECTATIONS YEAR 6 MATHEMATICS From September 2015

Number – number and place value

- ❖ Use negative numbers in context and calculate intervals across zero.
- ❖ Read, write, compare and order numbers up to 10,000,000 and determine the place value of each digit.
- ❖ Round any whole number to a required degree of accuracy.
- ❖ Solve number and practical problems that involve all of the above.

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 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.

Number – addition, subtraction, multiplication and division

- ❖ Multiply multi-digit numbers up to 4-digits by a 2-digit whole number using the formal written method of long multiplication.
- ❖ Divide numbers up to 4-digits by a 2-digit whole number using the formal written method of long division, and interpret remainders as whole numbers, fractions or by rounding.
- ❖ Divide numbers up to 4-digits by a 2-digit whole number using the formal written method of short division, and interpret remainders appropriately.
- ❖ Perform mental calculations, including mixed operations and larger numbers.
- ❖ Identify common factors, common multiples and prime numbers.
- ❖ Use knowledge of order of operations to carry out calculations involving four operations.
- ❖ Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
- ❖ Solve problems involving all four operations.
- ❖ Use estimation to check answers to calculations and determine an appropriate degree of accuracy.

Algebra

- ❖ 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.

Number – 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.
- ❖ Add and subtract fractions with different denominations and mixed numbers.
- ❖ Multiply simple pairs of proper fractions, writing the answer in the simplest form.
- ❖ Divide proper fractions by whole numbers.
- ❖ Associate a fraction with division and calculate decimal fraction equivalents for a simple fraction.
- ❖ Identify the value of each digit to 3 decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers to 3 decimal places.
- ❖ Multiply one digit numbers with up to two decimals places by whole numbers.
- ❖ Use written division methods in cases where the answer has up to two decimal places.
- ❖ Solve problems and round the answers with accuracy.
- ❖ Recall and use equivalences between simple fractions, decimals ad percentages.

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.

Geometry – 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.

Measurements

- ❖ 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 (cm^3) and cubic metres (m^3), and extending to other units [for example, mm^3 and km^3].

Statistics

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