**Key Stage 2 Maths, assessment strands**

**Year 3**

**Number**

I can:

Count from 0 in multiples of 4,8,50 and 100. I can find 10 or 100 more or less than a given number.

Recognise the place value of each digit in a three digit number (hundreds, tens, ones).

Compare and order numbers to 1000.

Identify, represent and estimate numbers using different representations.

Read and write numbers up to 1000 in numerals and words.

Solve number problems and practical problems.

Add and subtract numbers mentally, including three digit numbers in ones, tens and hundreds.

Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.

Estimate the answer to a calculation and use inverse operations to check answers.

Solve problems, including missing number problems, using number facts , place value and more complex addition and subtraction.

Recall and use multiplication and division facts for the number 3,4 and 8 multiplication tables.

Write and calculate mathematical statements for multiplication and division using the multiplication tables that I know. These include two digit numbers times one digit numbers using mental methods then progressing to formal written methods.

Solve problems, including missing number problems, involving multiplication and division. These include positive integer scaling problems and correspondence problems in which n objects are connected to m objects.

Count up and down in tenths. I can recognise that tenths arise from dividing an object into 10 equal parts and from dividing one digit numbers or quantities by 10.

Recognise and use fractions as numbers, including unit fractions and non unit fractions with small denominators.

Recognise and show using diagrams, equivalent fractions with small denominators.

Add and subtract fractions with the same denominator within one whole.

Compare and order unit fractions and fractions with the same denominators.

**Measurement**

Measure, compare, add and subtract using lengths (m/cm/mm) mass (kg/g) and volume/ capacity (l/ml).

Measure the perimeter of simple 2D shapes.

Add and subtract amounts of money to give change, using both pounds and pence in practical contexts.

Tell and write the time from an analogue clock. I can use Roman numerals from I to XII and 12 hour and 24 hour clocks.

Estimate and read time with increasing accuracy to the nearest minute. I can record and compare time in terms of seconds, minutes and hours and use vocabulary such as o’clock, am/pm morning, afternoon, noon and midnight.

Know the number of seconds in a minute and the number of days in each month, year and leap year.

Compare durations of events (for example to calculate the time taken by particular events or tasks).

**Geometry**

Draw 2D shapes and make 3D shapes using modelling materials. I can recognise 3D shapes in different orientations and describe them.

Recognise angles as a property of shape or a description of a turn.

Identify right angles, recognise that two right angles make a half turn, three make three quarters of a turn and four a complete turn. I can identify whether angles are greater than or less than a right angle.

Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.

**Statistics**

Interpret and present data using bar charts, pictograms and tables.

Solve one step and two step questions, for example, How many more? And how many fewer? Using information presented in scaled bar charts, pictograms and tables.

**Year 4**

**Number**

I can:

Count in multiples of 6,7,9,25 and 1000.

Find 1000 more or less than a given number.

Count backwards through zero to include negative numbers.

Recognise the place value of each digit in a four digit number (thousands, hundreds, tens and ones).

Order and compare numbers beyond 1000.

Identify, represent and estimate numbers using different representations.

Round any number to the nearest 10, 100 or 1000.

Solve number and practical problems with increasingly large positive numbers.

Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.

Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.

Estimate and use inverse operations to check answers to a calculation.

Solve addition and subtraction two step problems in contexts, deciding which operations and methods to use and why.

Recall multiplication and division facts for multiplication tables up to 12x12.

Use place value and known and derived facts to multiply and divide mentally, including multiplying by 0 and 1 and multiplying together three numbers.

Recognise and use factor pairs and commutativity in mental calculations.

Multiply two digit and three digit numbers by a one digit number using formal written layout

Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit. I can solve problems involving integer scaling problems and harder correspondence problems such as n objects are connected to m objects.

Recognise and show, using diagrams, families of common equivalent fractions.

Count up and down in hundredths and recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.

Solve problems which involve increasingly harder fractions to calculate quantities. I can use fractions to divide quantities, including non unit fractions where the answer is a whole number.

Add and subtract fractions with the same denominator.

Recognise and write decimal equivalents of any number of tenths or hundredths.

Recognise and write decimal equivalents to quarter, half and thirds.

Find the effect of dividing a one or two digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths.

Round decimals with one decimal place to the nearest whole number.

Compare numbers with the same number of decimal places up to two decimal places.

Solve simple measure and money problems involving fractions and decimals to two decimal places.

**Measurement**

Convert between different units of measure, for example, kilometre to metre, hour to minute.

Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres.

Find the area of rectilinear shapes by counting squares.

Estimate, compare and calculate different measures, including money in pounds and pence.

**Geometry**

Compare and classify geometric shapes, including quadrilaterals and triangles based on their properties and sizes.

Identify acute and obtuse angles and compare and order angles up to two right angles by size.

Identify lines of symmetry in 2D shapes presented in different orientations.

Complete a simple symmetric figure with respect to a specific line of symmetry.

Describe positions on a 2D grid as coordinates in the first quadrant.

Describe movements between positions as translations of a given unit to the left or right and up or down.

Plot specified points and draw sides to complete a given polygon.

**Statistics**

Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.

Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.

**Year 5**

**Number**

I can:

Read, write, order and compare numbers to at least 1000000 and determine the value of each digit.

Count forwards or backwards in steps of powers of 10 for any given number up to 1000000.

Interpret negative numbers in context. I can count forwards and backwards with positive and negative whole numbers, including through to zero.

Round any number up to 1000,000 to the nearest 10, 100, 1000, 10000 and 100,000.

Solve number problems and practical problems that involve all of the above.

Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.

Add and subtract whole numbers with more than 4 digits, including using formal written methods.

Add and subtract numbers mentally with increasingly large numbers.

Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.

Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

Identify multiples and factors, including finding all factor pairs of a number and common factors of two numbers.

Know and use the vocabulary of prime numbers, prime factors and composite numbers.

Establish whether a number up to 100 is prime and recall prime numbers up to 19.

Multiply numbers up to 4 digits by a one or two digit number using a formal written method, including long multiplication for two digit numbers.

Multiply and divide numbers mentally drawing upon known facts.

Divide numbers up to 4 digits by a one digit number using the formal written method of short division. I can interpret remainders appropriately for the context.

Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.

Recognise and use square numbers and cube numbers. I can recognise the notation for squared (2) and cubed (3).

Solve problems involving multiplication and division including using my knowledge of factors and multiples, squares and cubes.

Solve problems involving addition, subtraction, multiplication and division and a combination of these. I can understand the meaning of the equals sign.

Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.

Compare and order fractions whose denominators are all multiples of the same number.

Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.

Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements greater than 1 as a mixed number.

Add and subtract fractions with the same denominator and denominators that are multiples of the same number.

Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.

Read and write decimal numbers as fractions.

Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.

Round decimals with two decimal places to the nearest whole number and to one decimal place.

Read, write, order and compare numbers with up to three decimal places.

Solve problems involving numbers up to three decimal places.

Recognise the per cent symbol and understand that percent relates to ‘number of parts per hundred’ I can write percentages as a fraction with the denominator 100 and as a decimal.

Solve problems which require knowing percentage and decimal equivalents of half, quarters, fifth, two fifths and four fifths of those fractions with a denominator of a multiple of 10 or 25.

**Measurement**

Convert between different units of metric measure (for example kilometre and metre, centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre.

Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.

Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.

Calculate and compare the area of rectangles (including squares) and use standard units including square centimetres and square metres. I can estimate the area of irregular shapes.

Estimate volume, for example using 1cm cubed blocks to build cuboids (including cubes). I can estimate capacity for example using water.

Solve problems involving converting between units of time.

Use all four operations to solve problems involving measure (length, mass, volume and money) using decimal notation, including scaling.

**Geometry**

Identify 3D shapes, including cubes and other cuboids, from 2D representations.

Know angles are measured in degrees. I can estimate and compare acute, obtuse and reflex angles.

Draw given angles and measure them in degrees.

Identify angles at a point and one whole turn (360 degrees) at a half turn (180 degrees) and a quarter turn (90 degrees).

Use the properties of rectangles to deduce related facts and find missing lengths and angles.

Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.

Identify, describe and represent the position of a shape following a reflection or translation. I can use appropriate language and know that the shape has not changed.

Solve comparison, sum and difference problems using information presented in a line graph.

Complete, read and interpret information in tables, including timetables.

**Year 6**

**Number**

I can:

Read, write, order and compare numbers up to 10,000000 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. I can 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 using mixed operations and large numbers.

Identify common factors, common multiples and prime numbers.

Use my 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 . I can use common multiples to express fractions in the same denomination.

Compare and order fractions, including fractions greater than 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.

Divide proper fractions by whole numbers.

Associate a fraction with division and calculate decimal fraction equivalents.

Identify the value of each digit in numbers given to three decimal places. I can 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.

**Ratio**

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.

**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.

**Measurement**

Solve problems involving the calculation and conversion of units of measure. I can use decimal notation up to three decimal places where appropriate.

Use read, write and convert between standard units. I can convert measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa. I can use decimal notation to up to three places.

I can 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, cubic metres, extending to other units.

**Geometry**

Draw 2D shapes using given dimensions and angles.

Recognise, describe and build simple 3D shapes, including making nets.

Compare and classify geometric shapes based on their properties and sizes. I can find unknown angles in quadrilaterals and regular polygons.

Illustrate and name parts of circles including radius, diameter, circumference and know that diameter is twice the radius.

Recognise that angles where they meet at a point, are on a straight line or are vertically opposite. I can find missing angles.

Describe positions on the full coordinate grid.

Draw and translate simple shapes on the coordinate plane and reflect them in the axes.

Interpret and construct pie charts and line graphs and use these to solve problems.

Calculate and interpret the mean as an average.