KEY STAGE 2 MATHS KEY ASSESSMENT OVERVIEW

YEAR 3

Count from 0 in multiples of 50 and 100 and 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, and ones) and compare and order numbers up to 1000.
Read and write numbers up to 1000 in numerals and in words.
Add and subtract numbers mentally, including: a three-digit number and one: a three-digit number and tens: a three-digit number and hundreds.
Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.
Estimate the answer to a calculation and use inverse operations to check answers for addition and subtraction.
Add and subtract numbers with up to three digits, using formal written methods of column addition and subtraction (introducing regrouping e.g. 91 -73).
Write, manipulate and calculate mathematical statements for multiplication and division, including for TO x O numbers, using mental and progressing to formal written methods.
Solve number & problems, including missing number problems, using number facts and more complex addition and subtraction.
Solve number & problems, including missing number problems, using number facts and more complex division and multiplication.
Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10.
Recognise, find and write fractions of a discrete set of objects and use as numbers: unit fractions and non-unit fractions with small denominators.
Add and subtract fractions with the same denominator within one whole (for example ⅕ + ⅗ = ⅘).
Compare and order unit fractions. Recognise and show using diagrams, equivalent fractions with small denominators.
Add and subtract amounts of money to give change, using both £ and p in practical contexts.
Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).
To measure and work out the perimeter of simple 2-D shapes.
Tell and write the time to the nearest five minutes on an analogue clock. Comparing time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m., p.m., morning, afternoon, noon and midnight.
Read and write Roman Numerals up to I – XII, including on a clock face.
Knows 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].
Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them.
Recognise angles as a property of shape and can identify right angles (how many make a ½, ¾ of a turn or complete turn); identify whether angles are greater than or less than a right angle.
Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.
Present data, interpret and solve questions using bar charts, pictograms and tables.

YEAR 4

Count in multiples of 6, 7, 9, 25 and 1000.
Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) and round any number to the nearest 10, 100 or 1000.
Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.
Recall multiplication and division facts for multiplication tables up to 12 × 12.
Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.
Count backwards through zero to include negative numbers.
Find 1000 more or less than a given number and order and compare numbers beyond 1000.
Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers.
Recognise and use factor pairs.
Solve problems; involving increasingly harder fractions to calculate quantities or divide quantities; of measure involving fractions and decimals to two decimal places.
Solve calculation problems involving two-step addition, subtraction, multiplication and division in contexts, deciding which operations to use and why, and estimate and use inverse operations to check answers to a calculation.
Recognise and show families of common equivalent fractions and know decimal equivalents of tenths, hundredths, quarter half and three quarters.
Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.
Add and subtract fractions with the same denominator, within and beyond one whole one.
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 and compare numbers with the same number of decimal places up to two decimal places.
Read and write Roman Numerals to 100 (I to C).
Convert between different units of measure [for example, kilometre to metre; hour to minute; minutes to seconds; years to months].
Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres and area of a rectilinear shape by counting squares.
Estimate, compare and calculate different measures, including money in pounds and pence.
Read, write and convert time between analogue and digital 12- and 24-hour clocks and solve problems duration problems.
Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes, and identify and compare acute and obtuse angles up to 180 degrees.
Identify lines of symmetry in 2-D shapes presented in different orientations and complete a simple symmetric figure with respect to a line of symmetry.
Describe positions and translate left/right, up/down movements on a 2-D grid as coordinates in the first quadrant and plot points and draw sides to complete a given polygon.
Present, interpret and solve problems involving discrete and continuous data using appropriate graphical methods, including bar charts, pictograms, tables, time and other graphs.

YEAR 5

Read, write, order, compare and know place value of numbers to at least 1 000 000 and be able to round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000.
Add and subtract numbers mentally with increasingly large numbers and whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction).
Multiply / divide numbers mentally using known facts and use formal written methods for 4 digit x 1 or 2 digit, and 4 digit ÷ 1 digit short division (interpreting remainders in context).
Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.
Convert between decimal numbers, fractions and percentages and find percentages and fractions of quantities including solving problems.
Round decimals with two decimal places to the nearest whole number and to one decimal place.
Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.
Recognise and use square numbers and cube numbers, and the notation for squared (2^2) and cubed (2^3).
Solve problems involving addition, subtraction, multiplication and division and a combination of these, including using knowledge of factors and multiples, squares and cubes.
Compare and order, add and subtract fractions whose denominators are the same or are all multiples of the same number.
Interpret negative numbers in context, count forwards and backwards with + or - whole numbers, including through zero, in steps of powers of 10 for any given number up to 1000 000.
Recognise and convert between mixed numbers and improper fractions [for example, $\frac{6}{5}$ = 1⅕] and multiply mixed numbers and proper fractions by a whole number (supported by materials and diagrams).
Read, write, order and compare numbers with up to three decimal places and solve problems involving up to 3 decimal places (Example, 0.71 = $\frac{71}{100}$=71%).
Can identify multiples and factors, find factor pairs of a number, common factors of two numbers and use prime numbers, prime factors and composite (non-prime) numbers and establish whether a number up to 100 is prime and recall prime numbers up to 19.
Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.
Convert between different units of metric measure and 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 (cm/m) and calculate and compare the area of rectangles (including squares, cm^2, m^2) and estimate area of irregular shapes.
Estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes) and capacity [for example, using water].
Use all four operations to solve problems involving measure [for example, length, mass, volume, money, time] using decimal notation, including scaling and conversions.
Identify 3-D shapes, including cubes and other cuboids, from 2-D representations (e.g. nets).
Estimate, compare, measure and draw acute, obtuse and reflex angles.

Use the properties of rectangles and knowledge of angles at a point (360°) or on a straight line (180°) 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, using the appropriate language, and know that the shape has not changed.
Complete, read and interpret information in tables, including timetables, and line graphs to solve comparison, sum and difference problems.

YEAR 6

Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit and round any whole number to a required degree of accuracy.
Multiply and divide multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication or long division (interpreting remainders).
Solve multi-step problems involving addition, subtraction, multiplication and division and use estimation to check answers to calculations and determine, in context, an appropriate degree of accuracy.
Identify and use common factors to simplify fractions; use common multiples to express fractions in the same denomination to compare and order them, including fractions > 1.
Solve multi-step problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison.
Use their knowledge of the order of operations to carry out calculations involving the four operations.
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 simplest form and multiply and divide proper fractions by whole numbers [for example, ½ ÷ 2 = ¼ , ¼ × 2 = ½].
Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, ⅜].
Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places.
Multiply and divide numbers with up to two decimal places by whole numbers.
Solve problems using equivalences between simple fractions, decimals and percentages, including in different contexts where answers are rounded to specified degrees of accuracy.
To use simple ratio and simple proportion to solve problems.
Use negative numbers in context and calculate intervals across 0.
Generate and describe linear number sequences including across zero.
Use simple formulae and express missing number problems algebraically.
To perform mental calculations, including with mixed operations and large numbers.
Solve problems converting between of units of measure, smaller to larger, and vice versa, using decimal notation up to three decimal places.
Know formulae to find the area or volume of shapes (including area of parallelograms & triangles) and recognise that shapes with the same areas can have different perimeters and vice versa.

Compare and classify geometric shapes based on increasingly complex properties and use them to draw 2-D shapes using given dimensions and angles: recognise, describe and build simple 3-D shapes, including making nets.
Find unknown angles and length using knowledge of angles at a point, on a straight line, or vertically opposite.
Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.
Draw and translate simple shapes on the coordinate plane, reflect them in the axes: use all four quadrants.
Interpret and construct pie charts and line graphs and use these to solve problems including converting between miles and kilometres.
Calculate and interpret the mean as an average.