



# Devon Moors Federation

KEY OBJECTIVES IN MATHS FOR

KEY STAGE 1

AND

KEY STAGE 2

## YEAR 1 MATHS - KEY OBJECTIVES

- 1 Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.
- 2 Count, read and write numbers to 100 in numerals.
- 3 Read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs.
- 4 Given a number, identify one more and one less.
- 5 Represent and use number bonds and related subtraction facts within 20.
- 6 Add and subtract one-digit and two-digit numbers to 20, including zero.
- 7 Recognise, find and name a half as one of two equal parts of an object, shape or quantity.
- 8 Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.
- 9 Measure and begin to record length/height, weight/mass, capacity/volume & time.
- 10 Recognise and know the value of different denominations of coins and notes.
- 11 Sequence events in chronological order using language.
- 12 Recognise and use language relating to dates, including days of the week, weeks, months and years.
- 13 Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.
- 14 Recognise and name common 2-D shapes (e.g. Square, circle, triangle).
- 15 Recognise and name common 3-D shapes (e.g. Cubes, cuboids, pyramids & spheres).

## YEAR 2 MATHS - KEY OBJECTIVES

- 1 Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward.
- 2 Recognise the place value of each digit in a two-digit number.
- 3 Compare and order numbers from 0 up to 100; use  $<$ ,  $>$  and  $=$  signs.
- 4 Use place value and number facts to solve problems; recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.
- 5 Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:  
TU+U, TU+T, TU+TU and U+U+U.
- 6 Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.
- 7 Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.
- 8 Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication ( $\times$ ), division ( $\div$ ) and equals ( $=$ ) signs.
- 9 Recognise, find, name and write fractions  $\frac{1}{3}$ ,  $\frac{1}{4}$ ,  $\frac{2}{4}$  and  $\frac{3}{4}$  of a length, shape, set of objects or quantity.
- 10 Write simple fractions for example,  $\frac{1}{2}$  of 6 = 3 and recognise the equivalence of  $\frac{2}{4}$  and  $\frac{1}{2}$ .
- 11 Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value.
- 12 Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times.
- 13 Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line.
- 14 Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces.
- 15 Interpret and construct simple pictograms, tally charts, block diagrams and simple tables.

## YEAR 3 MATHS – KEY OBJECTIVES

- 1 Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number.
- 2 Compare and order numbers up to 1000.
- 3 Add and subtract numbers mentally, including: HTU+U, HTU+T and HTU+H.
- 4 Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.
- 5 Estimate the answer to a calculation and use inverse operations to check answers.
- 6 Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.
- 7 Count up and down in tenths.
- 8 Recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10.
- 9 Compare and order unit fractions, and fractions with the same denominators.
- 10 Recognise and show, using diagrams, equivalent fractions with small denominators.
- 11 Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.
- 12 Add and subtract fractions with the same denominator within one whole [for example,  $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$ ].
- 13 Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).
- 14 Measure the perimeter of simple 2-D shapes.
- 15 Add and subtract amounts of money to give change, using both £ and p in practical contexts.
- 16 Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks.
- 17 Estimate and read time with increasing accuracy to the nearest minute.
- 18 Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.
- 19 Identify whether angles are greater or less than a right angle.
- 20 Interpret and present data using bar charts, pictograms and tables.

## YEAR 4 MATHS – KEY OBJECTIVES

- 1 Count backwards through zero to include negative numbers.
- 2 Recognise the place value of each digit in a four-digit number.
- 3 Round any number to the nearest 10, 100 or 1000.
- 4 Recall multiplication and division facts for multiplication tables up to  $12 \times 12$ .
- 5 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.
- 6 Recognise and use factor pairs and commutativity in mental calculations.
- 7 Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.
- 8 Recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.
- 9 Recognise and write decimal equivalents to  $\frac{1}{4}$ ,  $\frac{1}{2}$  and  $\frac{3}{4}$ .
- 10 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.
- 11 Round decimals with one decimal place to the nearest whole number.
- 12 Compare numbers with the same number of decimal places up to two decimal places.
- 13 Convert between different units of measure; estimate, compare and calculate different measures, including money in pounds and pence.
- 14 Find the area of rectilinear shapes by counting squares.
- 15 Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.
- 16 Compare and classify geometric shapes, including quadrilaterals and triangles, based on properties and sizes.
- 17 Complete a simple symmetric figure with respect to a specific line of symmetry.
- 18 Describe positions on a 2-D grid as coordinates in the first quadrant.
- 19 Describe movements between positions as translations of a given unit to the left/right and up/down.
- 20 Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs

## YEAR 5 MATHS – KEY OBJECTIVES

- 1 Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero.
- 2 Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.
- 3 Recognise and use square numbers and cube numbers, and the notation for squared ( $^2$ ) and cubed ( $^3$ ).
- 4 Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.
- 5 Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.
- 6 Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.
- 7 Establish whether a number up to 100 is prime and recall prime numbers up to 19.
- 8 Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.
- 9 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.
- 10 Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context.
- 11 Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements  $> 1$  as a mixed number.
- 12 Compare and order fractions whose denominators are all multiples of the same number.
- 13 Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.
- 14 Add and subtract fractions with the same denominator and denominators that are multiples of the same number.
- 15 Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.
- 16 Read and write decimal numbers as fractions.
- 17 Round decimals with two decimal places to the nearest whole number and to one decimal place.
- 18 Read, write, order and compare numbers with up to three decimal places.
- 19 Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal.
- 20 Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.
- 21 Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.
- 22 Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres ( $\text{cm}^2$ ) and square metres ( $\text{m}^2$ ) and estimate the area of irregular shapes.
- 23 Use the properties of rectangles to deduce related facts and find missing lengths and angles.
- 24 Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.
- 25 Identify 3-D shapes, including cubes and other cuboids, from 2-D representations.
- 26 Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.
- 27 Draw given angles, and measure them in degrees ( $^\circ$ ).
- 28 Identify angles at a point and one whole turn (total  $360^\circ$ ); at a point on a straight line and  $\frac{1}{2}$  a turn (total  $180^\circ$ ).
- 29 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.
- 30 Complete, read and interpret information in tables, including timetables

## YEAR 6 MATHS – KEY OBJECTIVES

- 1 Use negative numbers in context, and calculate intervals across zero.
- 2 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.
- 3 Use their knowledge of the order of operations to carry out calculations involving the four operations.
- 4 Use common factors to simplify fractions.
- 5 Compare and order fractions, including fractions  $> 1$ .
- 6 Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.
- 7 Multiply simple pairs of proper fractions, writing the answer in its simplest form.
- 8 Divide proper fractions by whole numbers.
- 9 Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction.
- 10 Multiply one-digit number with up to two decimal places by whole numbers.
- 11 Use written division methods in cases where the answer has up to two decimal places.
- 12 Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison.
- 13 Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.
- 14 Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.
- 15 Solve problems involving similar shapes where the scale factor is known or can be found.
- 16 Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.
- 17 Use simple formulae.
- 18 Generate and describe linear number sequences.
- 19 Express missing number problems algebraically.
- 20 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.
- 21 Convert between miles and kilometres.
- 22 Calculate the area of parallelograms and triangles.
- 23 Calculate, estimate and compare volume of cubes and cuboids using standard units.
- 24 Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.
- 25 Find unknown angles in any triangles, quadrilaterals, and regular polygons.
- 26 Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.
- 27 Describe positions on the full coordinate grid (all four quadrants).
- 28 Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.
- 29 Interpret and construct pie charts and line graphs.
- 30 Calculate and interpret the mean as an average