**Primary Curriculum 2014**

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**Suggested Key Objectives**

**for Mathematics**

**at Key Stages 1 and 2**

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**Year 1 Maths Key Objectives**

**Taken from the National Curriculum**

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

**Year 1 Maths Key Objectives**

**Summarised form**

|  |  |
| --- | --- |
|  | Count to and across 100 from any number |
|  | Count, read and write numbers to 100 in numerals |
|  | Read and write mathematical symbols: +, - and = |
|  | Identify "one more" and "one less" |
|  | Use number bonds and subtraction facts within 20 |
|  | Add and subtract 1-digit and 2-digit numbers to 20, including zero |
|  | Recognise, find and name a half |
|  | Recognise, find and name a quarter |
|  | Measure and begin to record length, mass, volume and time |
|  | Recognise and know the value of all coins and notes |
|  | Use language to sequence events in chronological order |
|  | Recognise and use language relating to dates |
|  | Tell the time to the half-hour, including drawing clocks |
|  | Recognise and name common 2-D shapes |
|  | Recognise and name common 3-D shapes |

**Year 2 Maths Key Objectives**

**Taken from the National Curriculum**

|  |  |
| --- | --- |
|  | Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward |
|  | Recognise the place value of each digit in a two-digit number |
|  | Compare and order numbers from 0 up to 100; use <, > and = signs |
|  | 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 |
|  | Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: TU+U, TU+T, TU+TU and U+U+U |
|  | Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. |
|  | Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers |
|  | Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs |
|  | Recognise, find, name and write fractions 1/3, 1/4 , 2/4 and 3/4 of a length, shape, set of objects or quantity |
|  | Write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2. |
|  | Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value |
|  | 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 |
|  | Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line. |
|  | Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces |
|  | Interpret and construct simple pictograms, tally charts, block diagrams and simple tables |

**Year 2 Maths Key Objectives**

**Summarised form**

|  |  |
| --- | --- |
|  | Count in steps of 2s, 3s and 5s, and steps of 10 |
|  | Recognise place value in two-digit numbers |
|  | Compare and order numbers up to 100 using <, > and = |
|  | Recall and use number addition/subtraction facts to 20, and derive related facts |
|  | Add and subtract mentally and with objects one- and two-digit numbers |
|  | Understand and use the inverse relationship between addition and subtraction |
|  | Know 2×, 5× and 10× tables, including recognising odd & even numbers |
|  | Calculate mathematical statements using x and ÷ symbols |
|  | Recognise, find, name and write 1/3, 1/4, 1/2 and 3/4 of size, shape or quantity |
|  | Write simple fraction facts, e.g. 1/2 of 6 = 3 |
|  | Combine amounts of money to make a value, including using £ and p symbols |
|  | Tell the time to the nearest 5 minutes, including drawing clocks |
|  | Describe properties of 2-D shapes, including number of sides and symmetry |
|  | Describe properties of 3-D shapes, including number of edges, vertices and faces |
|  | Interpret and construct simple tables, tally charts and pictograms |

**Year 3 Maths Key Objectives**

**Taken from the National Curriculum**

|  |  |
| --- | --- |
|  | Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number. |
|  | Compare and order numbers up to 1000 |
|  | Add and subtract numbers mentally, including: HTU+U, HTU+T and HTU+H |
|  | 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 |
|  | Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables |
|  | 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 |
|  | Compare and order unit fractions, and fractions with the same denominators |
|  | Recognise and show, using diagrams, equivalent fractions with small denominators |
|  | Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators |
|  | Add and subtract fractions with the same denominator within one whole [for example, 5/7 + 1/7 = 6/7 ] |
|  | Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) |
|  | Measure the perimeter of simple 2-D shapes |
|  | Add and subtract amounts of money to give change, using both £ and p in practical contexts |
|  | Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks |
|  | Estimate and read time with increasing accuracy to the nearest minute |
|  | Identify horizontal and vertical lines and pairs of perpendicular and parallel lines |
|  | Identify whether angles are greater or less than a right angle |
|  | Interpret and present data using bar charts, pictograms and tables |

**Year 3 Maths Key Objectives**

**Summarised form**

|  |  |
| --- | --- |
|  | Count in multiples of 4, 8, 50 and 100 |
|  | Compare and order numbers up to 1000 |
|  | Add and subtract numbers mentally, including round numbers to HTU |
|  | Add and subtract using standard column method |
|  | Estimate answers to calculations and use the inverse to check answers |
|  | Know 3×, 4× and 8× tables |
|  | Count up and down in tenths |
|  | Understand that tenths are objectives or quantities divided into ten equal parts |
|  | Compare and order simple fractions |
|  | Recognise and show equivalent fractions |
|  | Find and write fractions of a set of objects |
|  | Add and subtract fractions with common denominators (less than one) |
|  | Measure, compare and calculate measures using standard units |
|  | Measure the perimeter of simple 2-D shapes |
|  | Add and subtract money, including giving change |
|  | Tell and write the time from an analogue clock, including using Roman numerals |
|  | Estimate and read time to the nearest minute |
|  | Identify horizontal, vertical, parallel and perpendicular lines |
|  | Identify whether angles are greater or less than a right angle |
|  | Interpret and present data using bar charts, pictograms and tables |

**Year 4 Maths Key Objectives**

**Taken from the National Curriculum**

|  |  |
| --- | --- |
|  | Count backwards through zero to include negative numbers |
|  | Recognise the place value of each digit in a four-digit number |
|  | Round any number to the nearest 10, 100 or 1000 |
|  | Recall multiplication and division facts for multiplication tables up to 12 × 12 |
|  | 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 and commutativity in mental calculations |
|  | Multiply two-digit and three-digit numbers by a one-digit number using formal written layout |
|  | Recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. |
|  | Recognise and write decimal equivalents to ¼, ½ and ¾ |
|  | 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 |
|  | Convert between different units of measure; estimate, compare and calculate different measures, including money in pounds and pence |
|  | Find the area of rectilinear shapes by counting squares |
|  | Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days |
|  | Compare and classify geometric shapes, including quadrilaterals and triangles, based on properties and sizes |
|  | Complete a simple symmetric figure with respect to a specific line of symmetry. |
|  | Describe positions on a 2-D grid as coordinates in the first quadrant |
|  | Describe movements between positions as translations of a given unit to the left/right and up/down |
|  | Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs |

**Year 4 Maths Key Objectives**

**Summarised form**

|  |  |
| --- | --- |
|  | Count backwards through zero, including negative numbers |
|  | Recognise place value in four-digit numbers |
|  | Round any number to the nearest 10, 100 or 1000 |
|  | Know tables up to 12 × 12 |
|  | Use place value and number facts to carry out mental calculations |
|  | Use factor pairs and commutativity in mental calculations |
|  | Use short multiplication method |
|  | Recognise and use hundredths |
|  | Recognise and write decimal equivalents to ¼, ½ and ¾ |
|  | Divide one- or two-digit numbers by 10 and 100, using tenths and hundredths |
|  | Round decimals with one decimal place to the nearest whole number |
|  | Compare numbers up to two decimal places |
|  | Convert between different units of metric measurement, including money |
|  | Find the area of rectilinear shapes by counting squares |
|  | Solve problems converting units of time |
|  | Compare and classify shapes, including quadrilaterals and triangles |
|  | Complete a simple symmetric figure with respect to a specific line of symmetry. |
|  | Describe positions on a 2-D grid using co-ordinates |
|  | Describe translations using a given unit to the left/right and up/down |
|  | Interpret and present discrete and continuous data on appropriate graphs |

**Year 5 Maths Key Objectives**

**Taken from the National Curriculum**

|  |  |
| --- | --- |
|  | Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero |
|  | Read Roman numerals to 1000 (M) and recognise years written in Roman numerals |
|  | Recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³) |
|  | Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy |
|  | 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 (non-prime) numbers |
|  | Establish whether a number up to 100 is prime and recall prime numbers up to 19 |
|  | Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 |
|  | 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 |
|  | 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 |
|  | Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number |
|  | 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 |
|  | 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 |
|  | 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 |
|  | 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 |
|  | 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 including using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes |
|  | 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 3-D shapes, including cubes and other cuboids, from 2-D representations |
|  | Know angles are measured in degrees: 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 (total 360°); at a point on a straight line and ½ a turn (total 180°) |
|  | 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 |

**Year 5 Maths Key Objectives**

**Summarised form**

|  |  |
| --- | --- |
|  | Interpret negative numbers in context |
|  | Read Roman numerals to 1000, including years |
|  | Recognise and use square and cube numbers, and know the notation |
|  | Use rounding to check answers and determine accuracy |
|  | Identify multiples and factors, including finding factor pairs and common factors |
|  | Use vocabulary: prime numbers, prime factors and composite numbers |
|  | Know prime numbers up to 19 |
|  | Multiply and divide numbers by 10, 100 or 1000, including decimals |
|  | Use long multiplication for multiplying numbers of up to 4 digits by one or two digits |
|  | Divide numbers using standard written short division |
|  | Convert between mixed numbers and improper fractions |
|  | Compare and order fractions whose denominators are multiples of the same number |
|  | Identify, name and write equivalent fractions including tenths and hundredths |
|  | Add and subtract fractions with denominators that are multiples of the same number |
|  | Multiply proper fractions and mixed numbers by whole numbers with support |
|  | Read and write decimal numbers as fractions |
|  | Round decimals with 2 decimals places to whole number or to one decimal place |
|  | Read, write, order and compare numbers with up to 3 decimal places |
|  | Recognise % symbol and explain as a fraction with denominator 100 (parts out of 100) |
|  | Understand and use common approximate conversions between metric and imperial |
|  | Measure and calculate the perimeter of composite rectilinear shapes |
|  | Calculate the area of rectangles, and estimate the area of irregular shapes |
|  | Use the properties of rectangles to find missing lengths and angles |
|  | Distinguish between regular and irregular polygons |
|  | Identify 3-d shapes from 2-d representations |
|  | Know angles are measured in degrees and compare acute, obtuse and reflex angles |
|  | Draw and measure angles to the nearest degree |
|  | Identify angles at a point, in a turn and on a straight line |
|  | Describe and represent the result of a reflection or translation |
|  | Complete, read and interpret information in tables, including timetables |

**Year 6 Maths Key Objectives**

**Taken from the National Curriculum**

|  |  |
| --- | --- |
|  | Use negative numbers in context, and calculate intervals across zero |
|  | 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 |
|  | Use their knowledge of the order of operations to carry out calculations involving the four operations |
|  | Use common factors to simplify fractions |
|  | Compare and order fractions, including fractions > 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 [for example, 0.375] for a simple fraction |
|  | Multiply one-digit number 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 involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison |
|  | Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. |
|  | 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 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. |
|  | Use simple formulae |
|  | Generate and describe linear number sequences |
|  | Express missing number problems algebraically |
|  | 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 |
|  | Calculate the area of parallelograms and triangles |
|  | Calculate, estimate and compare volume of cubes and cuboids using standard units |
|  | Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius |
|  | Find unknown angles in any triangles, quadrilaterals, and regular polygons |
|  | Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles |
|  | 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. |
|  | Interpret and construct pie charts and line graphs |
|  | Calculate and interpret the mean as an average |

**Year 6 Maths Key Objectives**

**Summarised form**

|  |  |
| --- | --- |
|  | Use negative numbers to calculate intervals across zero |
|  | Divide numbers using long division, interpreting the remainders as appropriate |
|  | Use order of operations to carry out calculations |
|  | Use common factors to simplify fractions |
|  | Compare and order fractions of any size |
|  | Add and subtract fractions with different denominators and mixed numbers |
|  | Multiply simple pairs of proper fractions |
|  | Divide proper fractions by whole numbers |
|  | Calculate decimal fraction equivalents for simple fractions |
|  | Multiply a number with up to two decimal places by whole numbers |
|  | Use written division with answers of up to two decimal places |
|  | Solve problems involving the calculation of percentages |
|  | Recall and use equivalences between fractions, decimals and percentages |
|  | Solve problems using ratio using multiplication and division facts |
|  | Solve problems involving similar shapes where the scale factor is known |
|  | Solve problems involving proportion, using knowledge of fractions and multiples |
|  | Use simple formulae |
|  | Generate and describe linear number sequences |
|  | Express missing number problems algebraically |
|  | Convert units of measure between smaller and larger units |
|  | Convert between miles and kilometres |
|  | Calculate the area of parallelograms and triangles |
|  | Calculate and compare volume of cubes and cuboids |
|  | Illustrate and name parts of a circle |
|  | Finding missing angles in triangles, quadrilaterals and regular polygons |
|  | Recognise vertically opposite angles and find missing angles |
|  | Describe positions on the full co-ordinate grid |
|  | Translate shapes on a co-ordinate grid and reflect in the axes |
|  | Construct and interpret pie charts |
|  | Calculate the mean as an average |