

Key Learning in Mathematics – Year 1

| Number – number and place value | Number – addition and | Number – multiplication and division |
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| <ul style="list-style-type: none"> Start on any number less than 100. Count forwards and backwards in 1s. Count in twos, fives and tens. Read and write numbers to 100 in numerals Read and write numbers from 1 to 20 in numerals and words Begin to understand tens and ones (units) Make numbers using objects and pictures. E.g. when asked draw 4 ice cream cones or count 4 beads. Use the following words to compare numbers: equal; more; less (fewer); most; least. Say one more and one less than a given number. Make repeating patterns with numbers, objects or shapes Identify odd and even numbers | <ul style="list-style-type: none"> Read, write and understand calculations using the following symbols: addition (+); subtraction (-) and equals (=). Add and subtract to make any number to 20. Add and subtract using objects and pictures. Solve missing number problems such as $7 = \square - 9$ | <ul style="list-style-type: none"> Double up to 10, e.g. double 7 is 14. Know the related halves, e.g. half of 14 is 7. Begin to investigate multiplication and division using objects and real life equipment. E.g. Looking at the layout of egg boxes. "There are 3 rows of 2. Or sharing out objects so that everyone has the same amount. |
| Number – fractions | Measurement | |
| <ul style="list-style-type: none"> Understand that a fraction can describe part of a whole, e.g. "you have half of the cake" Halve objects (e.g. pizzas, cakes) and groups of objects (e.g. sweets, stickers) equally. Split objects (e.g. pizzas, cakes) and groups of objects (e.g. sweets, stickers) into 4 equal parts and know these are quarters. | <ul style="list-style-type: none"> Measure and begin to record: <ul style="list-style-type: none"> lengths and heights, using non-standard (cubes etc.) and then standard units (m/cm) mass/weight, using non-standard (cubes etc.) and then standard units (kg/g) capacity and volume using non-standard (milk bottles, cups, etc.) and then standard units (litres/ml) time (hours/minutes/seconds) Use the following vocabulary: <ul style="list-style-type: none"> lengths and heights (for example, long/short, longer/shorter, tall/short, double/half) mass/weight (for example, heavy/light, heavier than, lighter than) capacity and volume (for example, full/empty, more than, less than, half, half full, quarter) time (for example, quicker, slower, earlier, later) Recognise and use language relating to dates, including days of the week, weeks, months and years Sequence events in chronological order using language (for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening) 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 know the value of different coins and notes. E.g. a 5p coin is the same as 5 1p coins. | |
| Geometry – properties of shapes | Geometry – position and direction | |
| <ul style="list-style-type: none"> Recognise and name the following 2-D shapes: rectangles (including squares); circles and triangles Recognise and name the following 3-D shapes: cuboids (including cubes); pyramids and spheres | <ul style="list-style-type: none"> Make and discuss whole, half, quarter and three-quarter turns. E.g. using the hands on a clock. Describe position and direction using the following words: on top; underneath; in front; behind; next to; etc. | |
| Statistics | | |
| <ul style="list-style-type: none"> Sort objects, numbers and shapes, e.g. all the blue objects together, all the even numbers together, all the triangles together. Make block graphs and talk about them. Ask and answer simple questions by counting the number of objects in each category Comparing categories, e.g. which category is the most popular, least frequent. | | |

Key Learning in Mathematics – Year 2

| Number – number and place value | Number – addition and subtraction | Number – multiplication and division |
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| <ul style="list-style-type: none"> Count in 2s, 3s, and 5s from 0, and in tens from any number. Children count forwards and backwards. Read and write numbers to at least 100 in numerals and in words Recognise tens and ones in a 2 digit number. E.g. 23 is 2 tens and 3 ones. Partition numbers in different ways (for example, $23 = 20 + 3$ and $23 = 10 + 13$) Show numbers in different ways, including place on a number line Compare and order numbers from 0 up to 100; use < (smaller), > (greater) and = (equal) signs Find 1 or 10 more or less than a given number Round numbers to at least 100 to the nearest 10 Understand the connection between the 10 times table and place value (e.g. $10 \times 6 = 60$ the 6 has moved into the tens column) Recognise and continue simple sequences involving counting on or back in different steps. E.g. 20 22 24 we are counting in 2s. | <ul style="list-style-type: none"> Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting) Show that addition of two numbers can be done in any order and subtraction of one number from another cannot Understand subtraction as take away and difference. E.g. the difference between 5 and 15 is 10. Recall and use addition and subtraction facts to 20, and work out related facts up to 100. Know what two multiples of 5 (numbers in the 5 times table) total, up to 60 (to support telling time to nearest 5 minutes) Add and subtract numbers using objects, pictures and mentally, including: a two-digit number and ones; a two-digit number and tens; two, two-digit numbers; adding three one-digit numbers. Recognise and use the inverse relationship between addition and subtraction (they are opposites) and use this to check calculations and solve missing number problems. E.g. $20 + __ = 34$ $34 - 20 = 14$ $20 + 14 = 34$ Solve problems with addition and subtraction including those with missing numbers and those involving numbers, quantities and measures applying their knowledge of mental and written methods | <ul style="list-style-type: none"> Understand multiplication as repeated addition (e.g. $3 \times 5 = 5 + 5 + 5$) Understand division as sharing and grouping Understand that a division calculation can have a remainder. Show that multiplication of two numbers can be done in any order and division of one number by another cannot Know the 2, 5 and 10 times tables (know the linked division facts). Find and use doubles of simple two-digit numbers (numbers in which the ones total less than 10) Find and use halves of simple two-digit even numbers (numbers in which the tens are even) Calculate mathematical statements for multiplication and division within the 2, 5, and 10 times tables and write them using the multiplication (\times), division (\div) and equals (=) signs Solve problems involving multiplication and division (including those with remainders) including problems in contexts |
| <p>Number – fractions</p> <ul style="list-style-type: none"> Understand and use the terms numerator (top number telling us how many parts we have) and denominator (the bottom number telling us how many pieces there are altogether). Understand that a fraction can describe part of a group. Understand that the larger the denominator is, the more pieces it is split into and therefore the smaller each part will be 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. Count on and back in steps of $\frac{1}{2}$ and $\frac{1}{4}$ Write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$ | <p>Geometry – properties of shapes</p> <ul style="list-style-type: none"> Name and describe the properties of 2-D shapes, including the number of sides and line symmetry Name 2-D shapes on the surface of 3-D shapes, (for example, a circle on a cylinder and a triangle on a pyramid) Name and describe the properties of 3-D shapes, including the number of edges, vertices and faces Describe how a shape has been moved using words such as rotation, Know a quarter turn is a right angle and recognise half and three- quarter turns (clockwise and anti-clockwise) <p>Geometry – position and direction</p> <ul style="list-style-type: none"> Recognise and continue patterns and sequences <p>Statistics</p> <ul style="list-style-type: none"> Compare and sort objects, numbers and common 2-D and 3-D shapes and everyday objects Make and simple pictograms, tally charts, block diagrams and simple tables Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity Ask and answer questions about finding totals and comparing each piece of information. | <p>Measurement</p> <ul style="list-style-type: none"> Estimate and measure length/height to the nearest metre (m) or centimetre (cm) using rulers. Compare and order lengths and record the results using > (greater than), < (smaller than) and = (equal to). Estimate and measure mass to the nearest kilogram (kg) or gram (g) using scales. Compare and order mass and record the results using > (greater than), < (smaller than) and = (equal to). Estimate and measure capacity and volume to the nearest litre (l) or millilitre (ml) using measuring vessels. Compare and order volume/capacity and record the results using > (greater than), < (smaller than) and = (equal to). Read thermometers to the nearest degree ($^{\circ}\text{C}$). Know there are 60 minutes in an hour and 24 hours in a day. 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. Recognise and use symbols for pounds (£) and pence (p). Combine amounts to make a particular value. Find different combinations of coins that equal the same amounts of money. Add and subtract money and give change. |

Informal written methods and solve problems in all areas of the mathematics curriculum.

Key Learning in Mathematics – Year 3

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| <p>Number – number and place value</p> <ul style="list-style-type: none"> Count from 0 in 4s, 8s, 50s and 100s Count up and down in tenths Read and write numbers up to 1000 in numbers and in words Read and write numbers with one decimal place, e.g. 0.4 – four tenths – nought point four. Recognise the place value of each digit in a three-digit number, e.g. 356 – 3 hundreds, 5 tens and 6 ones. Partition (split) numbers in different ways (for example, $146 = 100 + 40 + 6$ & $146 = 130 + 16$) Show numbers in different ways, including place on a number line Compare and order numbers up to 1000 Compare and order numbers with one decimal place Find 1, 10 or 100 more or less than a given number Round numbers to at least 1000 to the nearest 10 or 100 Multiply and divide by 10 and 100 Recognise and continue number sequences involving counting on or back in different steps, e.g. 20 22 24 we are counting in 2s. Read Roman numerals from I to XII | <p>Number – addition and subtraction</p> <ul style="list-style-type: none"> Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) Understand takeaway as taking a number away or finding the difference between 2 numbers (when they are close together). E.g. $47 - 43 =$ 43 44 45 46 47 $47 - 43 =$ 4 Know what two multiples of 5 (numbers in the 5 times table) total, up to 100 Find and use addition and subtraction facts for 100 Find and use addition and subtraction facts for multiples of 100 totalling 1000, e.g. $100 + 900$ or $300 + 700$ Add and subtract numbers mentally, including: a three-digit number and ones; a three-digit number and tens; a three-digit number and hundreds Add and subtract numbers with up to three digits, using column addition and subtraction (see calculation policies) Use inverse operations to check answers, e.g. $30 + 40 = 70$ $70 - 30 = 40$ | <p>Number – multiplication and division</p> <ul style="list-style-type: none"> Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known or related fact, calculate mentally, use a jotting, written method) Understand that division is the inverse (opposite) of multiplication Understand how multiplication and division statements can be represented using arrays (see calculation policy) Understand division as sharing and grouping Know the 3, 4 and 8 times tables and the related division facts. Find and use doubles of all numbers to 100 and know the corresponding halves Find and use doubles of all multiples of 50 (50 times tables number) to 500 Write and calculate mathematical statements for multiplication and division using the times tables that they know, including for two-digit numbers times one-digit numbers (e.g. 23×4), using mental methods Write and calculate mathematical statements for multiplication using the times tables that they know, including for two-digit numbers times one-digit numbers (e.g. 23×4), progressing to formal written methods (see calculation policy) Write and calculate mathematical statements for division using the times tables that they know, including for two-digit numbers divided by one-digit numbers (e.g. 84 divided by 4), progressing to formal written methods (see calculation policy) Solve problems, including missing number problems, involving multiplication and division Solve problems, including missing number problems, involving multiplication and division (and interpreting remainders). |
| <p>Number – fractions</p> <ul style="list-style-type: none"> Understand that finding a fraction of an amount relates to division Find fractions of a group of objects. Read fractions and understand them. (e.g. $\frac{1}{2}$ is half) Recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10 Count on and back in steps of $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{1}{3}$ Compare and order unit fractions and fractions with the same denominators (including on a number line) Recognise and show, using diagrams, equivalent fractions with small denominators. (Fractions that are the same e.g. $\frac{1}{2}$ is the same as $\frac{5}{10}$) Add and subtract fractions with the same denominator within one whole (using diagrams) (for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$) | <p>Geometry – properties of shapes</p> <ul style="list-style-type: none"> Draw 2-D shapes and describe them Identify horizontal and vertical lines and pairs of perpendicular and parallel lines Make 3-D shapes using modelling materials; recognise 3-D 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; identify whether angles are greater than or less than a right angle | <p>Measurement</p> <ul style="list-style-type: none"> Measure, add and subtract lengths (m/cm/mm) Compare lengths (m/cm/mm) Understand that perimeter is a measure of distance around the edge of a shape Measure the perimeter of simple 2-D shapes Measure, add and subtract mass (kg/g) Compare mass (kg/g) Measure, add and subtract volume/capacity (l/ml) Compare volume/capacity (l/ml) Continue to estimate and measure temperature to the nearest degree ($^{\circ}\text{C}$) using thermometers Record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., 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 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 Compare durations of events (for example different durations of bus journeys) Continue to recognise and use symbols for pounds (£) and pence (p) and understand that the decimal point separates pounds and pence Recognise that ten 10p coins are equivalent to £1 and that each coin is $\frac{1}{10}$ of £1 Add and subtract amounts of money to give change, using both £ and p in practical contexts |
| | <p>Geometry – position and direction</p> <ul style="list-style-type: none"> Describe positions on a square grid labelled with letters and numbers (map type references) | |
| | <p>Statistics</p> <ul style="list-style-type: none"> Sort objects, numbers and common 2-D and 3-D shapes and everyday objects into sorting diagrams. Solve one-step and two-step questions (for example, 'How many more?' and 'How many fewer?') using information presented in scaled bar charts and pictograms and tables | |

For each area of the mathematics curriculum children choose appropriate ways to solve problems.

