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| **Foundation Phase Mathematical Development Area of Learning** | | | | | |
| Strands | Elements | Reception | Year 1 | Year 2 | Year 3 |
| **Children are able to:** | **Children are able to:** | **Children are able to:** | **Children are able to:** |
| **Using number skills** | **Use number facts and relationships** | **recite a range of number rhymes and songs**  |  |  |  |
| count reliably up to 10 objects | count reliably up to 20 objects | count sets of objects by grouping in 2s, 5s or 10s |  |
| **recite numbers up to 20, forwards and backwards, and from different starting points**  | **recite numbers up to 100, forwards and backwards and from different starting point**  | **recite numbers beyond 100, forwards and backwards and from different starting point** |  |
| read and write numbers to at least 10 | read and write numbers to at least 20 **forming and orientating them correctly**  | read and write numbers **to at least** 100  | |  | | --- | | read and write numbers to 1000 | |
| compare and order numbers to at least 10 | compare and order numbers to at least 20 | compare and order 2-digit numbers | compare and estimate with numbers up to 100 |
| **understand that zero means ‘none’**  | **demonstrate an understanding of place value, *e.g. one 10 and four units equal 14*, up to at least 20**  | **demonstrate an understanding of place value up to at least 100**  | **explain the value of a digit in numbers up to 1 000**  |
| **use number facts up to 5**  | use number facts within 10, i.e.:  - doubling and halving, *e.g. 4 + 4*  - bonds of 10, *e.g. 6 + 4* | use mental recall of number facts to 10 to derive other facts, i.e.:  - doubling and halving, *e.g. derive 40 + 40 from knowing 4 + 4*  - bonds of 10, *e.g. derive 60 + 40 from knowing 6 + 4* | use mental strategies to recall number facts within 20 |
|  | **recall doubles and near doubles up to 10**  | **recall doubles up to 20**  |  |
|  | **recognise and understand odd and even numbers up to20**  | **recognise and understand odd and even numbers up to 100**  | **identify odd and even numbers up to 1000**  |
| **count in 2s to 10 and in 10s to 100**  | **count in 2s, 10s and 5s to 100**  | **count on in 2s, 5s and 10s from any given number**  | **- explore sequences of whole numbers involving addition and subtraction, *e.g. counting in 2s, 3s and 4s from different starting points***   **- write the next two (or more) terms in sequences that involve addition or subtraction**  |

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| **Foundation Phase Mathematical Development Area of Learning** | | | | | |
| Strands | Elements | Reception | Year 1 | Year 2 | Year 3 |
| **Using number skills**   |  | | --- | |  | | **Use number facts and relationships** | **Children are able to:** | **Children are able to:** | **Children are able to:** | **Children are able to:** |
|  |  | recall and use 2, 5 and 10 multiplication tables | |  | | --- | | recall 2, 3, 4, 5 and 10 multiplication tables and use to solve multiplication and division problems  multiply numbers by 10  **identify multiples of 2, 3, 4, 5 and 10; use the term multiple**  | |
|  |  | **begin to link multiplication with simple division, *e.g. grouping and sharing in 2s, 5s and 10s***  |
| **use ordinal numbers to 10 in daily activities and play**  | **use ordinal numbers to 20 in practical situations**  | **use and record ordinal numbers in practical situations**  |  |
| |  |  |  | | --- | --- | --- | | **begin to read number words**  |  |  | | **read and write number words to 10**  | **read and write number words to 100** |  |
| **Fractions, decimals, percentages**  **and ratio** |  | find halves in practical situations | find halves and quarters in practical situations |  |
|  | **recall halves up to 10**  | **partition 2-digit numbers and know the value of each digit**  |  |
| **Using number skills** | **Calculate using mental and written methods** | **mentally recall ‘one more’ of a number within 10**  | **mentally recall ‘one more’ of a number within 20**  | **mentally add 10 or 20 to a given number up to 100**  | **list numbers that are ‘greater than’ or ‘less than’ another number**  |
| **mentally recall ‘one less’ of a number within 10**  | **mentally recall ‘one less’ of a number within 20**  | **mentally subtract 10 or 20 from a given number up to 100**  |
| combine two groups of objects to find ‘how many altogether?’ | use ‘counting on’ strategies to add two collections, starting with the larger number, *e.g.*  *8 + 5* | find small differences within 20 by using ‘counting on’ strategies | find differences within 100 |
| take away objects to find ‘how many are left?’ | add and subtract numbers involving up to 10 objects | use mental recall of number facts to 10 and place value to add or subtract larger numbers, *e.g.*  *24 + 4, 30 + 5, 34 + 10* |  |
|  | **use a range of strategies to mentally solve problems within 10**  | **find a small difference between two numbers by counting on, *e.g. 44 – 28 =***  |  |

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| **Using number skills** | **Calculate using mental and written methods** | **Children are able to:** | **Children are able to:** | **Children are able to:** | **Children are able to:** |
| **solve simple problems in a practical situation that involve simple addition and subtraction up to 5**  | **solve one-step problems that involve addition and subtraction, including missing number problems, *e.g.***  ***7 +*** ***= 9,* using concrete objects and pictorial representations**  | **solve one- and two-step problems that involve addition and subtraction, multiplication and simple division including missing number problems, *e.g. 40 –*** ***= 19***  | **use one and two step function machines to generate input and output involving addition and subtraction within 100; express, in words, the operations of function machines**   **find an ‘unknown’ in one step equations and use this to derive other facts, *e.g. 37 +*** ***= 100 therefore 100 – 37 =***  |
|  | **use known facts to solve simple problems within 10, *e.g. doubling and halving, number bonds***  | **use partitioning strategies to double and halve 2-digit numbers**  | -use mental strategies to add and subtract 2-digit numbers  - use partitioning to double and halve 2-digit numbers  - halve 2-digit numbers in the context of number, money and measures |
|  | **use known number facts when adding three single digit numbers and realise addition can be done in any order**  | **understand that multiplication is repeated addition, *e.g. 2 + 2 + 2 is the same as ‘three twos’***  |  |
|  |  | **add/subtract 9 or 11 from given number by adding/subtracting 10 and adjusting**  |  |
| **talk about addition and subtraction instructions in play activities**  | **understand and use the mathematical symbols for addition, subtraction and equals**  | **understand and use mathematical symbols for addition, subtraction, multiplication, division and equals**  | **read statements about numbers expressed using an inequality sign, *e.g. 6 > 4***  |
|  | **understand and use the different mathematical terms for addition and subtraction, *e.g. add, combine, find the difference***  | **understand and use the different mathematical terms for addition, subtraction, multiplication, division and equals, *e.g. find the total, share, goes into***  |  |
|  |  |  | **define a negative number as being less than 0**  |
| **Estimate and check** | **make a sensible estimate of up to 10 objects that can be checked by counting**  | make a sensible estimate of a number of objects that can be checked by counting | use checking strategies:  - repeat addition in a different order  -use halving and doubling within 20 | - check subtraction using addition  - check halving using doubling  - check multiplication using repeated addition |

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| Strands | Elements | Reception | Year 1 | Year 2 | Year 3 |
| **Using number skills** | **Estimate**  **and**  **check** | **Children are able to:** | **Children are able to:** | **Children are able to:** |  |
|  | **make a sensible estimate of measurement in length, height, weight and capacity that can be checked using non-standard measures**  | **make a sensible estimate of measurement in length, height, weight and capacity that can be checked using standard measures**  |  |
| **Manage money** | use 1p, 2p, 5p and 10p coins to pay for items | use different combinations of money to pay for items up to 20p | use different combinations of money to pay for items up to £1 | -use different combinations of money to pay for items up  to £2 and calculate the change  -order and compare items up to £10  -record money spent and saved |
|  | find totals and give change from 10p | find totals and give change from multiples of 10p |
| **Using measuring skills** | **Length, weight**  **/mass, capacity**   |  | | --- | |  | | use direct comparisons with:  - length, height and distance, *e.g. longer/shorter than*  - weight/mass, *e.g. heavier/lighter than*  - capacity, *e.g. holds more/less than* | use non-standard units to measure:  - length, height and distance  - weight/mass  - capacity | use standard units to measure:  - length, height and distance: metres, half metres or centimetres  - weight/mass: kilograms or 10 gram weights  - capacity: litres | -recognise that perimeter is the distance around a shape  -use standard units **to estimate and measure**: length: measure on a ruler to the nearest ½ cm  -weight/mass: use 5g, 10g and 100g weights  -capacity: use litres and half litres; measure to the nearest 100ml  |
|  |  | **use symbols related to length, weight/mass and capacity**  | **choose between metric units to measure a length**  |
| **Time** |  |  | read hours and minutes on a 12-hour digital clock | -tell the time to the nearest 5 minutes on an analogue clock and calculate how long it is to the next hour  -read hours and minutes on a 12-hour digital clock using am/pm conventions  **-calculate start times, finish times and durations using hours, 30-minute intervals and 15-minute intervals**  |
| use the concept of time in terms of their daily activities | use the concept of time in terms of their daily and weekly activities and the seasons of the year |  |
| **sing/chant the days of the week, months and seasons of the year in meaningful contexts, *e.g. when changing the class calendar***  | **understand and order the days of the week, the months and seasons of the year in meaningful contexts**  | **record the days of the week, the months and seasons of the year**  |
| demonstrate a developing sense of how long tasks and everyday events take | use standard units of time to read ‘o’clock’ using both analogue and 12-hour digital clocks | read ‘half past’, ‘quarter past’ and ‘quarter to’ on an analogue clock |

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| **Using measuring skills**  **Using geometry skills** | **Temperature** | **Children are able to:** | **Children are able to:** | **Children are able to:** | **Children are able to:** |
| use direct comparisons when describing temperature, *e.g. hot/cold* | use descriptive words for a range of temperatures, *e.g. cooler/warmer* | compare daily temperatures using a thermometer (°C) | take temperature readings using thermometers and interpret readings above and below 0°C |
| **Area and volume**  **Angle and position** | move in given directions | make whole turns and half turns | recognise half and quarter turns, clockwise and anti-clockwise | -find areas by counting squares  **-identify right angles**   **-recognise that two right angles make a half turn, and that four right angles make a full turn**   **-describe an angle as more or less than a right angle**   -use the four compass points to describe directions |
|  |  | recognise that a quarter turn is a right angle |
| **use prepositions to describe position**  | **describe position, direction and movement**  | **use mathematical vocabulary to describe position, direction and movement**  |
| **Shape** | **recognise and name common 2D shapes (*circle, square, triangle and rectangle*) and some 3D shapes (*cube, cuboid and sphere*) within play activities and the environment**  | **recognise and name common 2D shapes (*square, triangle, rectangle, circle and semi-circle*) and 3D shapes (*cube, cuboid, cone and sphere*) in order to begin to compare and sort**  | **recognise and name regular and irregular 2D and 3D shapes, understand and use the properties of shape**  | -**recognise and classify triangles, squares, rectangles, pentagons and hexagons, including irregular cases**    **-identify congruent shapes**    **-recognise 3D shapes, including prisms**  |
| **use 2D and 3D shapes to make models and pictures**  | **use 2D and 3D shapes and describe how they fit together**  | **make increasingly more complex or accurate models with 3D shapes and tessellate 2D shapes**  |
| **Movement** | **complete a simple symmetrical picture through a variety of media**  | **recognise and complete a symmetrical picture or simple shape**  | **identify a line of symmetry for 2D shapes and complete symmetrical pictures**  | -**identify lines of symmetry in 2D shapes**   **- draw horizontal and vertical lines of symmetry** |
| **Using data skills** | |  | | --- | | **Collect and record data**  **Present and analyse data**  **Interpret results** | | sort and classify objects using one criterion | sort and classify objects using more than one criterion | **sort and classify objects using more than two criterion**  |  |
| record collections using marks, numbers or pictures | collect information by voting or sorting and represent it in pictures, objects or drawings | gather and record data from:  - lists and tables  - diagrams  - block graphs  - pictograms where the symbol represents one unit | represent data using:  -lists, tally charts, tables and diagrams  -bar charts and bar line graphs labelled in 2s, 5s and 10s  -pictograms where one symbol represents more than one unit  using a key Venn and Carroll diagrams |

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| **Foundation Phase Mathematical Development Area of Learning** | | | | | |
| Strands | Elements | Reception | Year 1 | Year 2 | Year 3 |
| **Using data skills** | **Collect and record data**  **Present and analyse data**  **Interpret results** |  | |  |  | | --- | --- | | make lists and tables based on data collected |  | | extract and interpret information from lists, tables, diagrams and graphs | extract and interpret information from charts, timetables, diagrams and graphs. |
| |  | | --- | | **Pattern** | | **recognise and repeat three**  **object/colour/clapped patterns and sequences.**  | **demonstrate an understanding of repeating patterns, including shape and number, by describing, reproducing and extending.**  | **order and identify patterns in combinations of mathematical objects, including number and number tables, and discuss the relationship between them.**  |  |