

**Pupils in the Early Years Foundation Stage should be able to do these by the end of their Reception school year (R):**

- Say and use the number names in order in familiar contexts
- Count to 20
- Count reliably up to 10 everyday objects.
- Recognise numerals 1 to 9.
- Use language such as more or less, bigger or smaller, heavier or lighter, to compare two numbers or quantities.
- In practical activities and discussion, begin to use the vocabulary involved in adding and subtracting
- Find one more or less than a number from one to ten
- Begin to relate addition to combining two groups of objects and subtraction to 'taking away' from a group of objects
- In practical activities and discussion, begin to use the vocabulary involved in adding and subtracting.
- Talk about, recognise and recreate simple patterns
- Use language such as circle or bigger to describe the shape and size of solids and flat shapes.
- Use language such as 'greater', 'smaller', 'heavier' or 'lighter' to compare quantities.
- Use everyday words to describe position.
- Use developing mathematical ideas and methods to solve practical problems

Pupils in Year 1 should be able to do these by the end of school year:

- Read and write numerals from 0 to 20, then beyond; use knowledge of place value to position these numbers on a number track and number line.
- Derive and recall all pairs of numbers with a total of 10 and addition facts for totals to at least 5; work out the corresponding subtraction facts.
- Use the vocabulary related to addition and subtraction and symbols to record addition and subtraction number sentences.
- Double to at least 10
- Say one more/less (0-30)
- Count on and back in 1s, 2s, 5s and 10s
- Visualise and name common 2-D shapes and 3-D solids and describe their features; use them to make patterns, pictures and models.
- Subtract multiple of 10 from a 2 digit number
- Calculate; *T-tens U-units*
  - $U+U$  (bridging 10)
  - $TU+U$  (bridging 20)
  - $U-U$
  - $TU-U$  (bridging 10)

Most Pupils in Year 2 should be able to do these by the end of school year:

- Explain what each digit in a two-digit number represents, including numbers where 0 is a place holder; partition two-digit numbers in different ways, including into multiples of 10 and 1.
- Count reliably to at least 100
- Read, write and order numbers to 100
- Count on and back in 1s and 10s from any number under 100
- Double all numbers to 10 and half all even numbers to 20
- Know by heart the 2, 5 and 10 tables and division facts
- Know and use bonds to 20
- Know all pairs to 100 using 'ten' numbers
- Tell time to half and quarter hour
- Find simple fractions;  $\frac{1}{2}$  and  $\frac{1}{4}$  of simple shapes and amounts
- Visualise common 2-D shapes and 3-D solids; identify shapes from pictures of them in different positions and orientations; sort, make and describe shapes referring to their properties
- Use the symbols +, -,  $\times$ ,  $\div$  and = to record and interpret number sentences involving all four operations; calculate the value of an unknown in a number sentence (e.g.  $\_ \times 2 = 6$ ,  $30 - \_ = 24$  )
- Calculate; *T-tens U-units*
  - $TU + TU$  (bridging 10/100)
  - $TU - TU$  (bridging 10)
  - $TU \div U$  (where the divisor is 2, 5 10)

**Most Pupils in Year 3 should be able to do these by the end of school year:**

- Read and write numbers up to 1000 and put them in order. Know what each digit is worth.
- Count on or back in ones, tens or hundreds from any number under 1000, e.g. 462, 472, 482... or 462, 562, 662...
- Know by heart addition and subtraction facts to 20, e.g.  $4 + 16 = 20$ ,  $12 - 8 = 4$ .
- Use pairs of numbers that total 100 (and subtraction facts)
- Know by heart the 2, 3, 4, 5 and 10 times tables.
- Multiply 1 & 2 digit numbers by 10 and 100
- Find simple fractions, such as  $\frac{1}{2}$ ,  $\frac{1}{3}$ ,  $\frac{1}{4}$ ,  $\frac{1}{5}$ ,  $\frac{1}{10}$ , of shapes and numbers.
- Tell the time to the nearest 5 minutes.
- Use £.p. e.g. know that £2.04 is £2 and 4p.
- Draw and complete shapes with reflective symmetry; draw the reflection of a shape in a mirror line along one side
- Read, to the nearest division and half division, scales that are numbered or partially numbered; use the information to measure and draw to a suitable degree of accuracy
- Work out in their heads sums such as  $56 + 29$ , and  $97 - 51$ .
- Do simple divisions, such as  $27 \div 5$ .
- Calculate; *T-tens U-units*
  - $TU + TU$  (bridging 100)
  - $HTU + TU$  (NOT bridging 1000)
  - $HTU + HTU$  (NOT bridging 1000)
  - $TU - TU$
  - $HTU - TU$
  - $TU \times U$
  - $TU \div U$  (where divisor is 2, 3, 4, 5, 6, 10)

Most Pupils in Year 4 should be able to do these by the end of school year:

- Know all the tables by heart, e.g. know facts like  $7 \times 5$  and  $36/4$ .
- Read, write and order numbers to 10,000 and know what each digit represents
- Round numbers (3 digits) to the nearest 10 or 100.
- Multiply numbers like 38 by 10 or by 100, and divide numbers like 4200 by 10 or by 100 and find remainders
- Change pounds to pence and centimetres to metres, and vice versa, e.g. work out that £3.45 is the same as 345p, and that 3.5 metres is the same as 350 centimetres.
- Tell the time to the nearest minute and use a simple timetable.
- Pick out shapes with similar features, e.g. shapes with sides the same length, or with right angles, or symmetrical shapes.
- Know that angles are measured in degrees and that one whole turn is 360 , compare and order angles less than 180
- Choose & use standard metric units and their abbreviations when estimating, measuring and recording length, weight and capacity; know the meaning of 'kilo', 'centi' and 'milli' and, use decimal notation to record measurements
- Work out sums like  $234 + 479$  or  $791 - 223$  using pencil and paper and writing them in columns.
- Multiply and divide numbers up to 1000 by 2, 3, 4 or 5, and find remainders, e.g.  $36 \times 3$ ,  $87 / 4$ .
- Work out that a simple fraction like  $2/6$  is equivalent to  $1/3$  and identify fraction that total 1
- Calculate; *H-hundreds T-tens U-units*
  - $HTU + TU$
  - $HTU + HTU$  (bridging 1000)
  - $HTU - HU$
  - $HTU - HTU$
  - $TU \times U$  and  $TU \div U$

Most Pupils in Year 5 should be able to do these by the end of the school year:

- Multiply and divide any whole number up to 10 000 by 10 or 100.
- Explain what each digit represents in whole numbers and decimals with up to two places, and partition, round and order these numbers
- Use knowledge of place value and addition and subtraction of two-digit numbers to derive sums and differences and doubles and halves of decimals (e.g  $6.5 + 2.7$ ,  $6.5 - 2.7$ , half of 5.6, double 0.34)
- Solve word problems and explain their method.
- Use division to find a fraction of a number, e.g. find one fifth by dividing by 5.
- Work out in their head the difference between two numbers such as 3994 and 9007.
- Use efficient written methods to add and subtract whole numbers and decimals with up to two places.
- Read and plot coordinates in the first quadrant; recognise parallel and perpendicular lines in grids and shapes; use a set-square and ruler to draw shapes with perpendicular or parallel sides.
- Draw and measure lines to the nearest millimetre; measure and calculate the perimeter of regular and irregular polygons; use the formula for the area of a rectangle to calculate the rectangle's area.
- Construct frequency tables, pictograms and bar and line graphs to represent the frequencies of events and changes over time.

Most Pupils in Year 6 should be able to do these by the end of school year:

- Know all tables to 10 x 10, especially for division, e.g.  $63 \div 7 = 9$ , and quickly work out remainders.
- Multiply and divide decimals by 10 or 100 in their heads, e.g.  $2.61 \times 10$ ,  $53.2 \div 100$ .
- Put numbers, including decimals in order of size, e.g. 1.06, 0.099, 0.25, 1.67, 1.7
- Use pencil and paper to add and subtract decimals, e.g.  $3.91 + 8.04 + 24.56$ , or  $13.3 - 1.27$ .
- Use pencil and paper to multiply and divide, e.g.  $387 \times 46$ ,  $21.5 \times 7$ ,  $539 \div 13$ ,  $307.6 \div 4$ .
- Cancel fractions e.g. reduce  $\frac{4}{20}$  to  $\frac{1}{5}$ , and work out which of two fractions is bigger, e.g.  $\frac{7}{12}$  or  $\frac{2}{3}$ .
- Work out simple percentages of whole numbers, e.g. 25% of £90 is £22.50.
- Visualise and draw on grids of different types where a shape will be after reflection, after translations, or after rotation through 90 or 180 about its centre or one of its vertices.
- Select and use standard metric units of measure and convert between units of measure using decimals to two places (e.g change 2.75 litres to 2750 ml or vice versa)
- Solve problems by collecting, selecting, processing, presenting and interpreting data, using ICT where appropriate; draw conclusions and identify further questions to ask