Securing Level 3

For children to attain a secure level 3, they need to:

Understanding the Number System

- read and write numbers that contain zero as a place holder, understanding its role
- count in ones and tens, backwards and forwards, over boundaries, for example, 187, 197, 207…
- identify the important digits to compare and order two or more numbers, for example, 184 and 275 (hundreds digit), 384 and 392 (tens digit), 407 and 410 (units and tens digits)
- position numbers approximately on partially marked number lines
- round a number by identifying the multiple of 10 or 100 to which it is closest
- compare and order negative and positive numbers, using a number line
- identify the value of each digit in measures such as grams and in money
- understand the role of the numerator and denominator of a fraction
- identify, read and write fractions to describe a proportion of a shape or amount, for example, appreciate that, since there are 100 centimetres in a metre, 1 centimetre is equal to 1⁄100 of a metre.

Securing Mental Addition and Subtraction

- use known facts to work out related ones, for example, use 7 + 8 = 15 to work out 37 + 8 = 45 and 150 – 80 = 70
- partition two-digit numbers to support efficient calculation, for example, 41 – 19 = 21 + 20 - 19
- draw their own number lines to show steps in a calculation
- use the inverse operation to check answers, particularly for subtraction, for example, check 56 – 18 = 38 using 38 + 18
- identify that appropriate calculation(s) needed to solve a problem
- consider the numbers involved in a particular calculation to make appropriate decisions on which mental method to choose
- work out subtraction by counting backwards and counting forwards and decide which is the more efficient method for particular calculations
- use correct mathematical vocabulary to describe/explain their calculation methods.

Understanding and Using Multiplication and Division

- recognise when situations involving repeated addition are more efficiently represented using multiplication
- recognise when situations involving equal sharing or grouping or repeated subtraction are more efficiently represented using division
- use known facts to work out related ones, for example, use 3 x 4 = 12 to answer 30 x 4 = 120 or 120 ÷ 40 = 3
- represent arrays using multiplication and carry out multiplication calculations using arrays
- use partitioning to multiply a two-digit number by a single-digit number and record steps
- interpret division as the inverse of multiplication, for example, understanding that 24 ÷ 4 can be found using 4 x 6 = 24
- divide a two-digit number by a single-digit number by splitting it into sensible chunks
- find and interpret remainders in division, rounding up or down where appropriate
- find a unit fraction, for example, 1/5 of an amount using division, then multiply the answer to find non-unit fractions, for example 2/5 and 3/5.

Visualising and Classifying Shapes

- name, describe and sort 2-D shapes, using a range of properties including number of sides, equal sides and number of right angles
- name, describe and sort 3-D shapes, using number and shape of faces, number of edges and vertices
- compare shapes by describing what is the same and what is different about them
- use shape vocabulary accurately, including 2-D, side, vertex, polygon, circle, semi-circle, diagonal, regular, irregular, 3-D, face, edge, net, prism, cylinder, sphere
- understand that, in regular shapes, all sides are equal and all angles are equal
- use Venn and Carroll diagrams to sort shapes according to defined criteria
- draw on their practical experience of 2-D and 3-D shapes to visualise shapes, and generate and extend patterns

Solving Problems Involving Money and Measures

- identify important information in a word problem and use this to select appropriate operation(s)
- recognise when a problem involves more than one step, identify the steps and record working for each step
- explain their method; share and compare methods with others
- check that their answer to a problem is of a reasonable size and answers the original question
- include units of measure in the answer where appropriate
- draw and interpret time lines to find time differences.

Reading and Interpreting Tables and Graphs

- recognise key features of tables, and diagrams such as frequency charts, pictograms, bar charts, Venn and Carroll diagrams
- use all the information given in a graph or table, including the title and labels, to interpret the data it represents
- identify the appropriate column, row or cell of a table to find required information
- work out the value of each interval on a scale, count along the scale to check and write in unmarked amounts
- use their understanding of proportion to make sensible estimates for measures that fall between two marked intervals on a scale
- find and note down all the information needed to solve a problem
- identify and carry out the appropriate calculations needed to solve a problem involving data, including questions such as How many more…? And How many… altogether?