

Mountfields Lodge
Year 3 Calculation Policy for
Parents
March 2016



Addition: Year 3

Missing number problems using a range of equations as in Year 1 and 2 but with appropriate, larger numbers.

Partition into tens and ones

Partition both numbers and recombine.

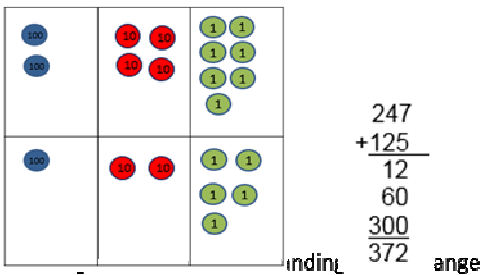
Count on by partitioning the second number only e.g.

$$\begin{aligned} 247 + 125 &= 247 + 100 + 20 + 5 \\ &= 347 + 20 + 5 \\ &= 367 + 5 \\ &= 372 \end{aligned}$$

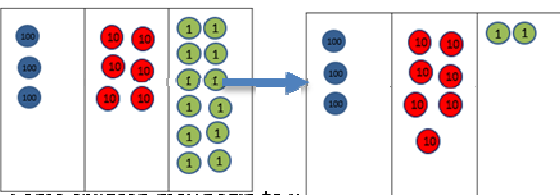
Children need to be secure adding multiples of 100 and 10 to any three-digit number including those that are not multiples of 10.

Towards a Written Method

Introduce expanded column addition modelled with place value counters (Dienes could be used for those who need a less abstract representation)



between tens and ones.



Some children may begin to use a formal columnar algorithm, initially introduced alongside the expanded method. The formal method should be seen as a more streamlined version of the expanded method, not a new method.

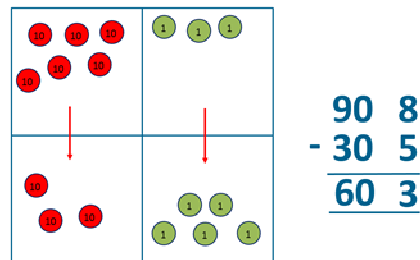
Subtraction: Year 3

Missing number problems e.g. $\square = 43 - 27$; $145 - \square = 138$; $274 - 30 = \square$; $245 - \square = 195$; $532 - 200 = \square$; $364 - 153 = \square$

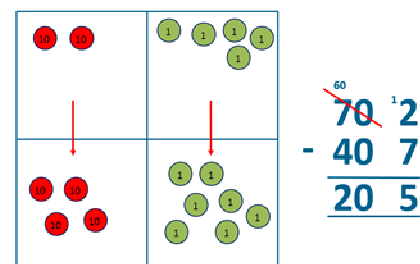
Mental methods should continue to develop, supported by a range of models and images, including the number line. The bar model should continue to be used to help with problem solving (see Y1 and Y2). Children should make choices about whether to use complementary addition or counting back, depending on the numbers involved.

Written methods (progressing to 3-digits)

Introduce expanded column subtraction with no decomposition, modelled with place value counters (Dienes could be used for those who need a less abstract representation) (**Complimentary + may be used**)



For some children this will lead to exchanging, modelled using [place value counters \(or Dienes\)](#).



A number line and expanded column method may be compared next to each other.

Some children may begin to use a formal columnar algorithm, initially introduced alongside the expanded method. The formal method should be seen as a more streamlined version of the expanded method, not a new method.

Multiplication: Year 3

Missing number problems

Continue with a range of equations as in Year 2 but with appropriate numbers.

Mental methods

Doubling 2 digit numbers using partitioning

Demonstrating multiplication on a **blank** number line – jumping in larger groups of amounts

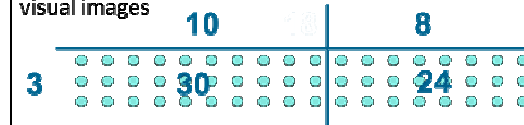
Start with repeated addition

$13 \times 4 = 10$ groups 4 = 3 groups of 4

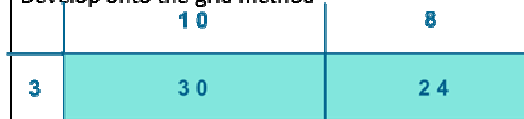
Use of a number line to physically group (SEN) eg 10×4 on number line then 3×4

Written methods (progressing to 2d x 1d)

Developing written methods using understanding of visual images



Develop onto the grid method



Give children opportunities for children to explore this and deepen understanding using Dienes apparatus and place value counters

Division: Year 3

÷ = signs and missing numbers

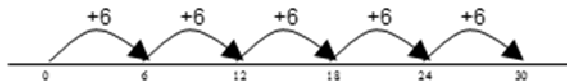
Continue using a range of equations as in year 2 but with appropriate numbers.

SEN LAPs share objects with concrete materials first.

Grouping

How many 6's are in 30?

$30 \div 6$ can be modelled as:



Becoming more efficient using a numberline

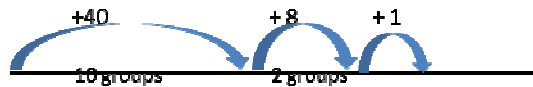
Children need to be able to partition the dividend in different ways.

$48 \div 4 = 12$



Remainders

$49 \div 4 = 12 \text{ r}1$



Sharing – 49 shared between 4. How many left over?

Grouping – How many 4s make 49. How many are left over?

Place value counters can be used to support children apply their knowledge of grouping.

For example:

$60 \div 10 =$ How many groups of 10 in 60?

$600 \div 100 =$ How many groups of 100 in 600?

G&T $123 \div 4 \gg 10 \times 4$, 20 times is 80, 30 times is 120