Calculation Policy

Haresfield C of E Primary School

HARESFIELD SCHOOL

NON : SEMPER : ALACRI

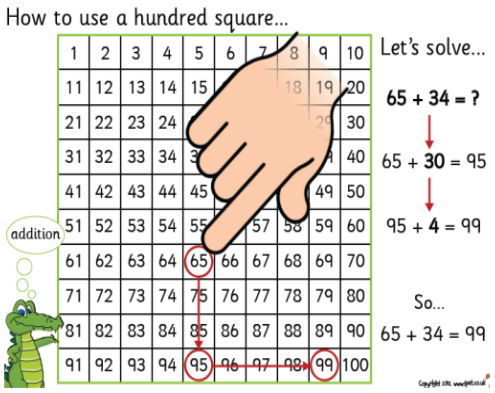
How we teach it.

Written and mental calculation at Stage 2

Written Addition at Stage 2

Method:

Using a Hundred Square:



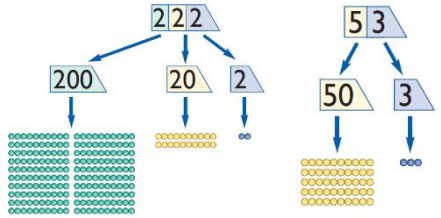
When children are ready to be adding larger numbers they will do so on a hundred square.

They will be encouraged to jump down in 10s and forwards in units.

Children are encouraged to then record this as a sum.

Leading to:

Partitioning:
222 + 53 =



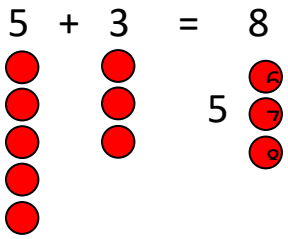
2 + 3 = 5
20 + 50 = 70
200 + 0 = 200
200 + 70 + 5 = 275

When children are confident in using a hundred square and have a good understanding of place value, they can then begin to partition.

This involves partitioning the numbers into 10s and units and adding these. Then recombining the 10s and units to get an answer.

Strategies to support:

Counting on:



I count out 3 counters
I put the number 5 in my head,
Then I count on 6,7,8

The children continue to use counters or other objects to support their addition.

However, they are now encouraged to hold the larger number in their head. Then they count on the lower number.

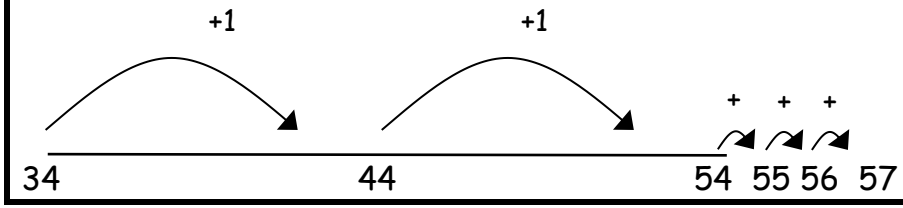
Children are encouraged to then record this as a sum.

Next Steps:

Children will begin to use 'blank number lines' where they draw a line starting with the larger number and counting on the number they are adding.

First counting on in jumps of tens and then ones.

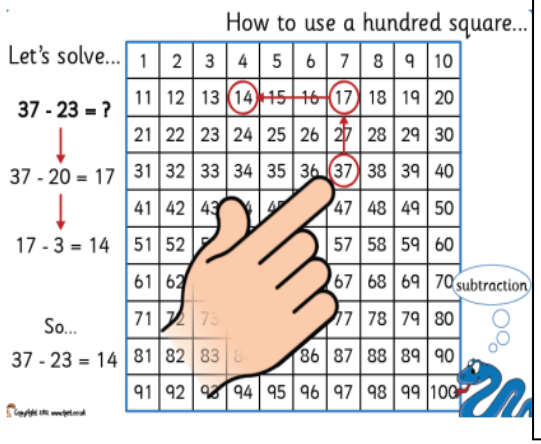
34 + 23 = 57



Written Subtraction at Stage 2

Method:

Using a Hundred Square:



When children are ready to subtract larger numbers they will do so on a hundred square.

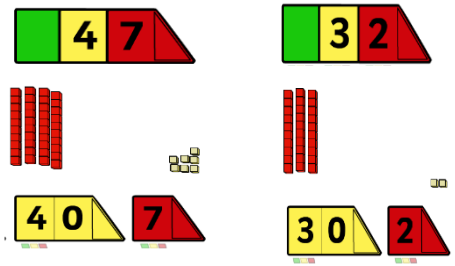
They will be encouraged to up in jumps of 10s and back in jumps of units.

Children are encouraged to then record this as a sum.

Leading to:

Partitioning:

47 - 32 =



40 - 30 = 10

7 – 2 = 5

10 + 5 = 15

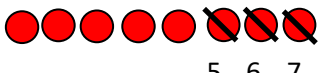
When children are confident in using a hundred square and have a good understanding of place value, they can then begin to partition.

This involves partitioning the numbers into 10s and units and subtracting these. Then recombining the 10s and units to get an answer.

Strategies to support:

Counting on:

8 - 3 = 5



I count 8 counters.
I keep 8 in my head.
I count backwards 3 as I move 3 counters away.
7, 6, 5

The children continue to use counters or other objects to support their subtraction.

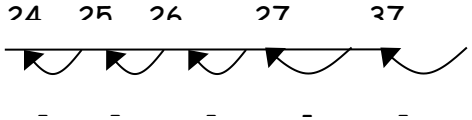
However, they are now encouraged to hold the larger

Next Steps:

Children will begin to use blank number lines to support calculations.

Counting back
First counting back in tens and then in ones.

47 - 23 = 24



Mental Addition and Subtraction at Stage 2

Children should be able to recall:

- Addition and subtraction facts for all numbers up to at least 10, e.g. 3 +4, 8 -5
- Number pairs with totals to 20

- All pairs of multiples of 10 with totals up to 100, e.g. 30 +70
- What must be added to any two – digit number to make the next multiple of 10.

- Addition doubles for all numbers to 20, e.g. 17 +17 and multiples of 10 to 50, e.g. 40 + 40

Working mentally, children should be able to:

- Add and subtract a pair of single-digit numbers, including crossing 10, e.g. 5+8, 12 -7
- Add any single digit number to or from a multiple of 10, e.g. 60 +5

- Subtract any single digit number from a multiple of 10, e.g. 80 – 7
- Add and subtract a single digit number to or from a two digit number, including crossing the tens boundary, e.g. 23 +5, 57+3, then 28 +5, 52 -7.

- Add or subtract a multiple of 10 to or from any two digit number, e.g. 27 +60, 72 -50
- Add 9, 19, 29, … or 11. 21. 31, …
- Add near doubles, e.g. 13 + 14, 39 +40

Children should know when to:

- Reorder numbers when adding
- Partition: bridge through 10 and multiples of 10 when adding and subtracting

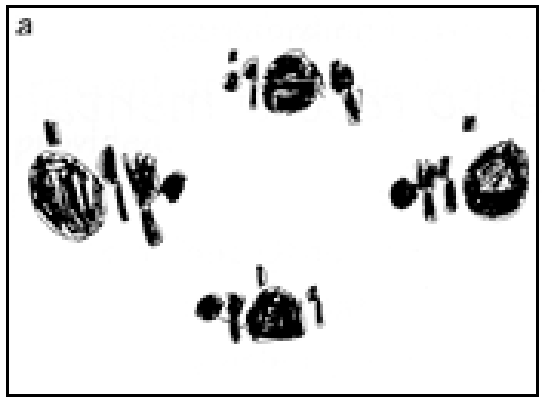
- Partition and combine multiples of tens and ones
- Use knowledge of pairs making 10
- Partition: Count on in tens and ones to find the difference

- Partition: add a multiple of 10 and adjust by 1
- Partition: double and adjust

Written Multiplication at Stage 2

Method:

Children will experience equal groups of objects and will count in 2s and 10s and begin to count in 5s. They will work on practical problem solving activities involving equal sets or groups.



Leading to:

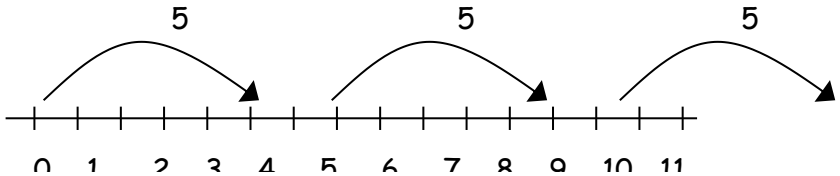
Children will develop their understanding of multiplication and use jottings to support calculation:

Repeated addition

3 times 5 is 5 + 5 + 5 = 15 or 3 lots of 5 or 5 x 3

Repeated addition can be shown easily on a number line:

5 x 3 = 5 + 5 + 5



Strategies to support:

Children should be able to model a multiplication calculation using an array. This knowledge will support with the development of the grid method.

○ ○ ○ ○ ○
○ ○ ○ ○ ○ 5 x 3 = 15
○ ○ ○ ○ ○

3 x 5 = 15

Next Steps:

Repeated addition

4 times 6 is 6 + 6 + 6 + 6 = 24 or 4 lots of 6 or 6 x 4

Children should use number lines and bead bars to support their understanding.

Written Division at Stage 2

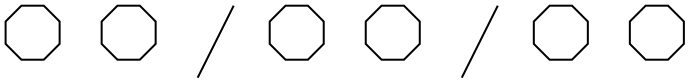
Method:

Children will understand equal groups and share items out in play and problem solving.
They will count in 2s and 10s and later in 5s.

Leading to:

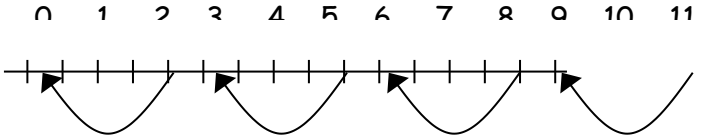
Grouping or repeated subtraction

There are 6 sweets, how many people can have 2 sweets each?



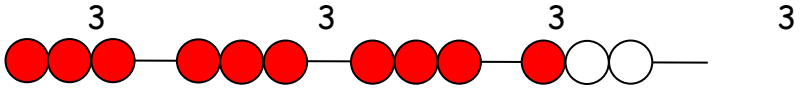
Repeated subtraction using a number line and bead bar

$12 \div 3 = 4$



Strategies to support:

The bead bar will help children with interpreting division calculations such as 10 ÷ 5 as 'how many 5s make 10?'



Next Steps:

Using symbols to stand for unknown numbers to complete equations using inverse operations.

□ ÷ 2 = 4 20 ÷ △ = 4 □ ÷ △ = 4

Mental Multiplication and Division at Stage 1 and Stage 2

Children should be able to recall:

Year 1

- Doubles of all numbers to 10, e.g. double 6
- Odd and even numbers to 20

Year 2

- Doubles of all numbers to 20 and corresponding halves
- Doubles of multiples of 10 to 50 and corresponding halves

- Multiplication facts for the 2, 5 and 10 times tables, and corresponding division facts
- Odd and even numbers to 100

Working mentally, children should be able to:

Year 1

- Count on from and back to zero in ones, twos, fives or tens

Year 2

- Double any multiple of 5 up to 50, e.g. double 35
- Halve any multiple of 10 up to 100, e.g. halve 90

- Find half of even numbers to 40
- Find the total number of objects when they are organised into groups of, 2, 5 or 10.

Children should know when to:

Year 1

- **Use patterns of last digit, e.g. 0 and 5 when counting in 5's.**

Year 2

- Partition double the tens and ones separately, then recombine
- Use knowledge that halving is the inverse of doubling and that doubling is equivalent to multiplying by two.

- Use knowledge of multiplication facts from the 2, 5 and 10 times table, e.g. recognise that there are 15 objects altogether because there are three groups of five.