Calculation Guidelines for Foundation Stage

Children begin to record in the context of play or practical activities and problems.

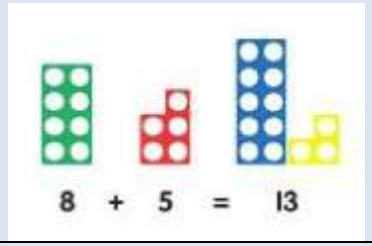
ADDITION

Begin to relate addition to combining two groups of objects

- Make a record in pictures, words or symbols of addition activities.

- Begin to record number sentences to go with practical activities.
- Use of games, songs and practical activities to begin using vocabulary.
- Children can say what is one more than any number to ten or beyond.

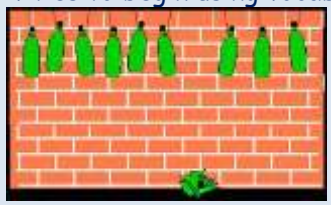
- Some children may progress onto using a number track.
- Use numicon to combine two sets



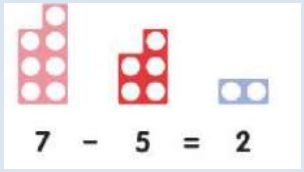
SUBTRACTION

Begin to relate subtraction to 'taking away'

- Make a record in pictures, words or symbols of subtraction activities.
- Use of games, songs and practical activities to begin using vocabulary.



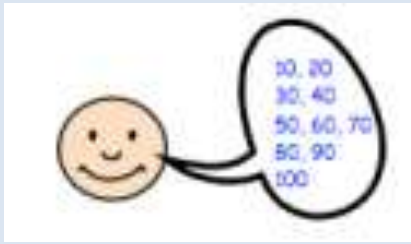
- Construct number sentences to go with practical activities.
- Children can find one less than any number to ten or beyond.
- Use numicon to subtract by layering.



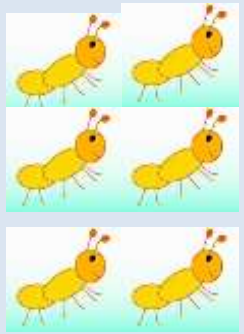
MULTIPLICATION

Real life contexts and use of practical equipment to count in repeated groups of the same size:

• Count in twos, fives and tens



Songs such as "The ants came marching two by two."

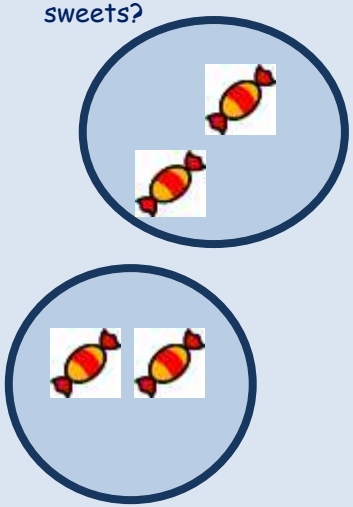


DIVISION

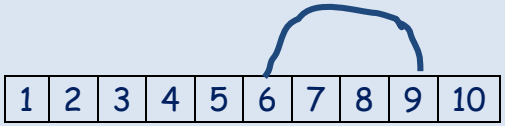
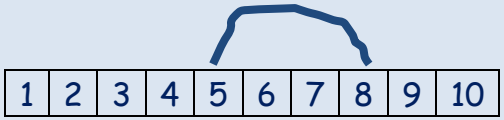
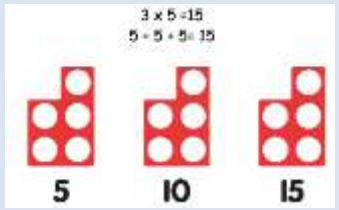
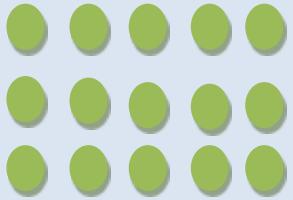
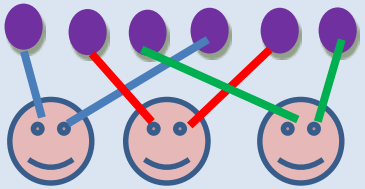
Share objects into equal groups
Use related vocabulary
Activities might include:

- Sharing of biscuits in Forest School.
- Separate a given number of objects into two groups.

How many groups of two can you make with 4 sweets?



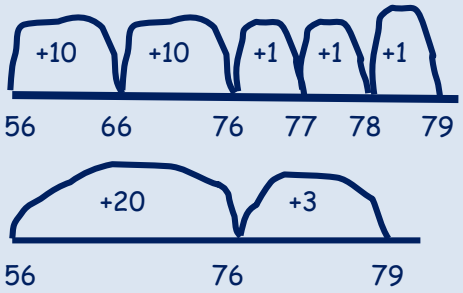
Calculation Guidelines for Year 1

ADDITION	SUBTRACTION	MULTIPLICATION	DIVISION
Children record in the context of play or practical activities and problems. They start to use some facts they know to help them to calculate.			
I found 6 conkers and my friend found 3.  Children show jumps on prepared number tracks or lines. 6+3=9  Some children draw their own number line  	There were 8 people on the bus and 3 got off.  • Children count back on a number track or number line. 8-3=5   • Children count on to find a difference. There are 23 children in the class and 19 are boys. How many girls are there?  	There were three children and they had 5 sweets each. How many sweets were there altogether?  Count practically in repeated groups of the same size. 	Understand division as sharing and grouping. **Grouping:** How many boxes are needed for 12 eggs?  6 + 6 You need 2 boxes. **Sharing:** There are 3 children and they share 6 sweets. How many each? 2 sweets each. 

Calculation Guidelines for Year 2

ADDITION

There were 56 sheep in one field and 23 in another. How many sheep were there altogether?



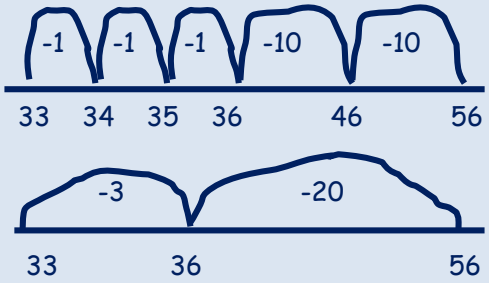
Children start to calculate in their head. They may start to record as a written method like this:

56+
23
79

50+6=56
20+3=23
70+9=79

SUBTRACTION

There were 56 sheep in a field and 23 escaped!



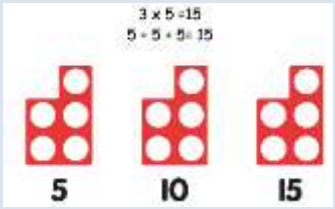
Children start to calculate in their head. They may start to record as a written method like this:

56-
23
33

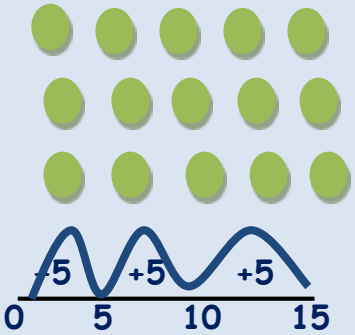
50+6
20+3
30+3 =33

MULTIPLICATION

There were three children and they had 5 sweets each. How many sweets were there altogether?



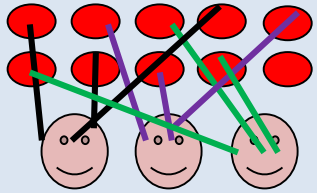
Count practically in repeated groups of the same size.



DIVISION

Understand division as sharing and grouping.

Sharing:
There are 10 sweets and 3 children. How many do they get each?



3 sweets each and 1 left over.

Grouping:
4 people can fit in a car. How many cars would you need for 23 people?

5 cars are needed.

Children record using informal written methods.
They use a range of facts they know to help them with their calculations.

Calculation Guidelines for Year 3

Children record using informal written methods. They may progress towards using formal written methods. They use a range of facts they know to help them with their calculations.

ADDITION

Add numbers with up to three digits.

789+52=

7 0 0 + 8 0 + 9
5 0 + 2
7 0 0 + 130 +11= 841

7 8 9
+ 5 2
1 1
1 3 0
7 0 0
8 4 1

SUBTRACTION

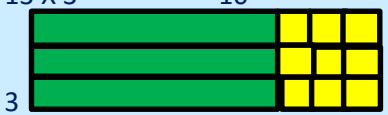
Subtract numbers with up to three digits.

7 2 4 - 5 6=

600 110 1
7 ~~0~~ ~~0~~ + 2 ~~0~~ + 4
- 5 0 + 6
6 0 0 + 6 0 + 8 = 668

MULTIPLICATION

13 X 3= 10 3



0 30 9

Children understand that multiplication can be done in any order. They can derive division facts from known multiplication facts.

4X3=12 **3X4=12**
12÷4=3 **12÷3=4**

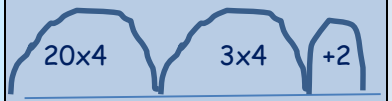
13X3=
10X3=30
3X3= 9

X	10	3
3		

13
X 3
30 (10X3)
9 (3X3)
39

DIVISION

94÷4



0 80 92 94

2 3 r 2
1
4 | 9 4

Calculation Guidelines for Year 4

ADDITION	SUBTRACTION	MULTIPLICATION	DIVISION

Children record using formal written methods.

They use a range of facts they know to help them with their calculations.

ADDITION

Add numbers with up to 4 digits.

```
  3 7 8 9
+   6 4 2
  4 4 3 1
  1 1 1
```

SUBTRACTION

Subtract numbers with up to 4 digits.

```
    6 19 1
  3 7 0 1
- 4 1 7
  3 2 8 4
```

MULTIPLICATION

Multiply two and three digit numbers by a one digit number using formal written layout.

346 X 8

X	300	40	6
8			

```
  346
X   8
   48   (8 X   6)
  320   (8 X  40)
 2400   (8 X 300)
 2768
```

DIVISION

432 ÷ 5

```
      8  6   r 2
         3
5 ) 4  3  2
```

432 ÷ 15

```
        2  8
      ------
15 ) 4  3  2
     3  0  0   15x20
     -------
     1  3  2
     1  2  0   15x 8
     -------
        1  2
```

$\frac{12}{15} = \frac{4}{5}$

Calculation Guidelines for Year 5

Children record using formal written methods.
They use a range of facts they know to help them with their calculations.

ADDITION

Add whole numbers with more than 4 digits using formal written methods.

```
  7 3 8 4 8
+ 6 2 9 7 4
-----------
1 3 6 8 2 2
  1   1 1
```

SUBTRACTION

Subtract whole numbers with more than 4 digits using formal written methods.

```
    8  12 19  1  2  1
    9  3  0  2  3  1
-   4  9  3  6  2  9
-------------------
    4  3  6  6  0  2
```

MULTIPLICATION

Multiply numbers up to 4 digits by a one or two digit number using a formal written method, including long multiplication for two digit numbers.

```
  328
X  27
-----
   56 ( 7X   8)
  140 ( 7X  20)
2100   (7X300)
  160 (20X  8)
  400 (20X20)
6000  (20 X 300)
-----
8856
```

Leading to:

4.92X3 (answer approx 15)

x	4	0.9	0.02
3	12	2.7	0.06

=12+2.7+0.06=14.76

DIVISION

Divide numbers up to 4 digits by a one digit number using the formal written method of short division and interpret remainders appropriately for the context.

```
    4 2 3   r 3
  -------
7 | 2 9 6 4
    1 2
```

Calculation Guidelines for Year 6

ADDITION

Solve multi- step problems involving addition and subtraction, selecting which methods to use and why.

Young Voices concerts take place at Birmingham on 5 nights from Monday to Friday. The table shows how many children attend on each night.

	Y3	Y4	Y5	Y6
Mon	1031	987	1282	2079
Tues	904	1007	1296	2509
Weds	1108	4236	975	3112
Thur	760	3902	2437	3941
Fri	896	782	3456	3807

How many children attended in years 3 and 4?
How many children attended in years 5 and 6?
How many more children in year 6 attended than in year 3?
What was the average number of children per night?

SUBTRACTION

MULTIPLICATION

Up to 4 digit numbers by a two digit number using the formal written method of long multiplication.

4346X28=

```
  4 3 4 6
X     2 8
-------
  3 4 7 6 8
    2 3 4
  8 6 9 2 0
      1
-------
1 2 1 6 8 8
  1   1
```

DIVISION

Divide numbers up to 4 digits by a two digit whole number using the formal written method of long or short division. Interpret remainders as whole numbers, fractions, or by rounding, as appropriate for the context.

2432÷18

```
      1 3 5
18 | 2 4 3 2
     1 8
     -----
       6 3
       5 4
       ---
         9 2
         9 0
         ---
           2
```

```
2  1
18 9
```

Children record using formal written methods.
They use a range of facts they know to help them with their calculations.