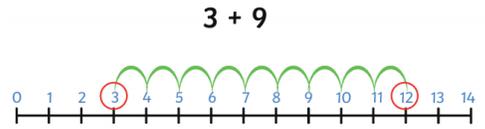
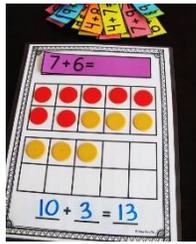
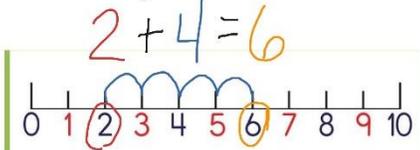


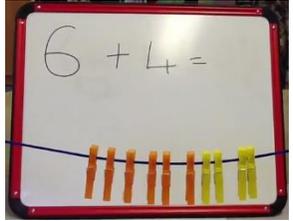
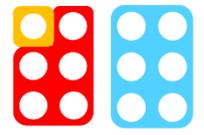
**Early Years**  
**Add single digit numbers**  
 Use quantity and objects to count on and find the total of 2 single digit numbers



Jake has 2 balloons. His mom gave him 4 more. How many balloons does Jake have altogether?

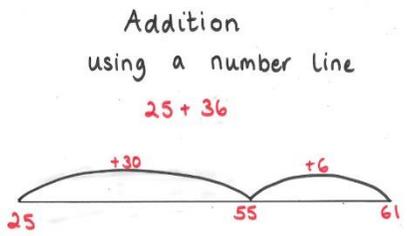


$5 + 1 = 6$



**Year 1**  
**Add up to 20**  
 Using a number line to count on 1 ones, encouraging to start on the biggest number  
 Use a range of equipment (Numicon, multi link, number lines, bead strings etc.)  
 Write number sentences using + and =  
 Interpret missing number problems  $\_\_ + 5 = 8$

**Year 2**  
**Add with 2 digit numbers**  
 Add 2 digit numbers and ones  
 Add 2 digit numbers and tens  
 Two 2 digit numbers.  
 First using apparatus then a blank number line, moving to more formal recording using partitioning (modelled by equipment)

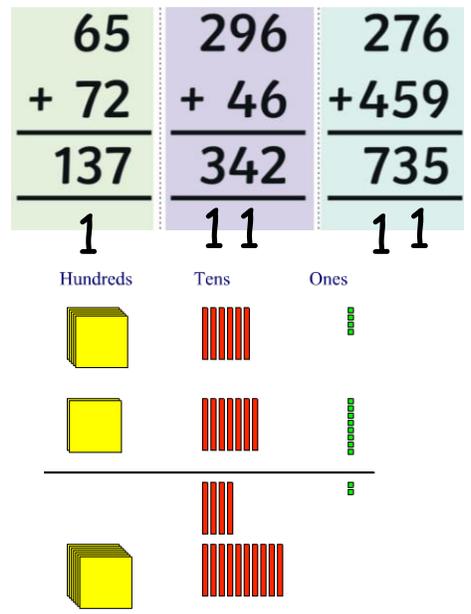


**Year 3**  
**Add numbers up to 3 digits**  
 Use partitioning to add 2 and 3 digit numbers or two 3 digit numbers.  
 Moving towards the formal written method for addition.

$52 + 76$   
 $50 + 2$   
 $+ 70 + 6$   

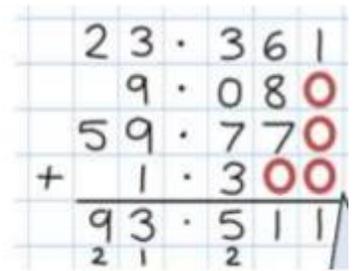

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 $120 + 8 = 128$



**Year 4**  
**Add numbers up to 4 digits**  
 Continue using the formal written method for addition starting with the units and carrying underneath. Include adding in context including money and measures

**Year 5**  
**Add numbers with more than 4 digits**  
 Continue using the formal written method to add. Including adding numbers with differing numbers of decimal places.

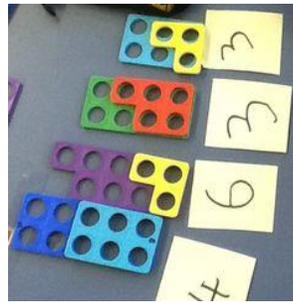


**Year 6**  
**Adding several numbers of increasing complexity**  
 Using formal method to adding multiple numbers including money and decimals with different numbers of decimal places.

## Early Years

### Subtract single digit numbers

Use quantity and objects to subtract and count back



$$13 - 5 = 8$$

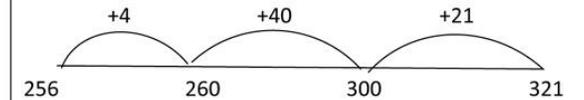


## Year 1

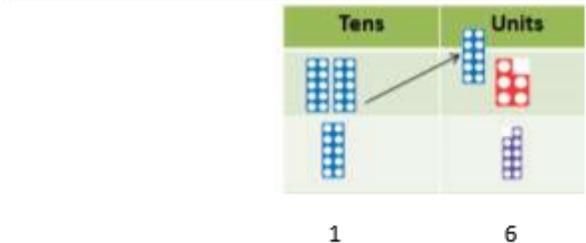
### Subtract from numbers up to 20

Using a number line to count back in ones, Use a range of equipment (Numicon, multi link, number lines, bead strings etc.) Write number sentences using - and = Interpret missing number problems  $9 - \_\_ = 8$

$$321 - 256$$



Add the 'hops':  $40 + 21 + 4 = 65$



$$\begin{array}{r} 425 \\ - 143 \\ \hline 2 \end{array} \quad \begin{array}{r} 3425 \\ - 143 \\ \hline 82 \end{array} \quad \begin{array}{r} 3425 \\ - 143 \\ \hline 282 \end{array}$$

## Year 2

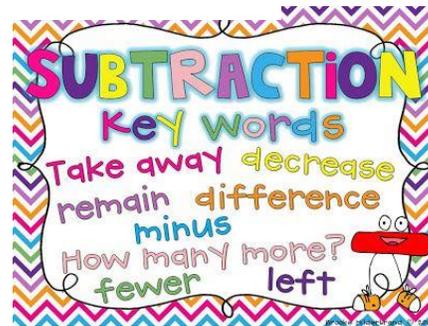
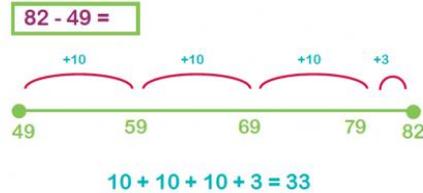
### Subtract with 2 digit numbers

Subtract 2 digit numbers and ones

Subtract 2 digit numbers and tens

Two 2 digit numbers.

First using apparatus then a number line, then a blank number line and moving to more formal recording using partitioning (modelled by equipment)



## Year 3

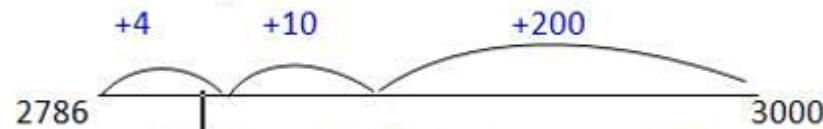
### Subtract with 2 and 3 digit numbers

Use partitioning to subtract 2 and 3 digit numbers. First on a empty number line by counting on or back Moving towards the formal written method for subtraction

## Year 5

### Numbers numbers with more than 4 digits

Continue using the formal written method to subtract. Including subtracting numbers with differing numbers of decimal places. Use counting on when one number is a multiple/ near multiple of 1000 or for decimals



## Year 4

### Subtract numbers up to 4 digits

Continue using the formal written method for subtraction starting with the units. Include adding in context including money and measures

## Year 6

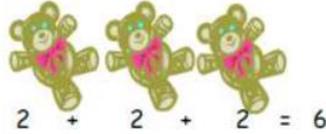
### Subtract with increasingly large and complex numbers

Using formal method to subtract numbers including money and decimals with different numbers of decimal places.

**Early Years**  
**Understand doubling**  
 Solve problems that involve doubling involving real life situations

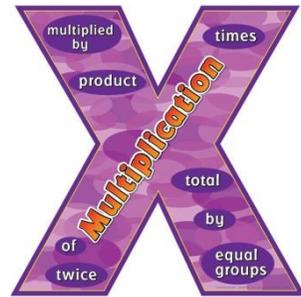
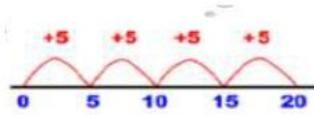


How many legs will 3 teddies have?



**Year 1**  
**Multiply with concrete objects, arrays and pictures**  
 Count in 2s, 5s and 10s  
 Answer questions such as '3 lots of 4'  
 Use objects to find doubles

**Year 2**  
**Multiplication using arrays and repeated addition**  
 For at least 2s, 5s and 10s  
 Use number lines to make equal jumps  
 Use Numicon to model the repeated addition  
 Learn doubles to 20  
 Begin to know doubles of multiples of 5  
 Begin to know doubles of 2-digit numbers less than 50 with less than 5 units



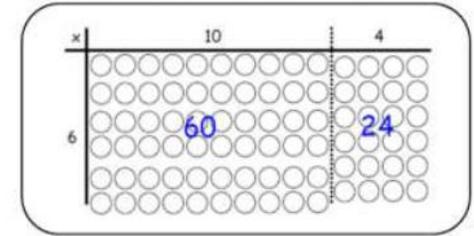
**Year 3**  
**Multiply a 2 digit number by a single digit number**  
 Introduce the grid method, demonstrate how an array links to this method. To do this children must be able to partition numbers, multiply tens by a single digit.  
 Recall multiplication facts for 2,3,4,5,8 and 10 times table.

Eg.  $23 \times 8 = 184$

X	20	3
8	160	24

$160 + 24 = 184$

Link the layout of the grid to an array initially:



Developing the grid method:

Eg.  $136 \times 5 = 680$

X	100	30	6
5	500	150	30

500  
150  
30  
680

**Year 4**  
**Multiply 2 and 3 digit numbers by a single digit - using all multiplication tables up to 12 x 12**  
 Continue using the grid method for multiplication and move on to short multiplication when children are confident  
 Multiply multiples of 10 and 100

x	300	20	7
4	1200	80	28



	3	2	7
x			4
	1	2	8

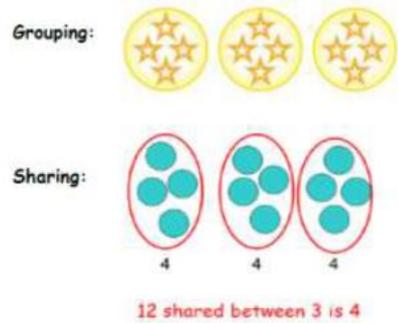
	1	2	3	4
x				6
	7	4	0	4
	1	2	3	4
	1	9	7	4

(1234 x 6)  
(1234 x 10)

**Year 5**  
**Multiply up to 4 digits by 1 or 2 digits**  
 Column multiplication  
 Long multiplication when multiplying by 2- digits

**Year 6**  
**Short multiplication and long multiplication and multiplying decimals up to 2 decimal places**  
 Use rounding and approximation to check calculations

**Early Years**  
**Understand halving and sharing**  
 Using real life situations



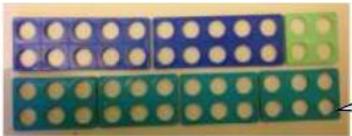
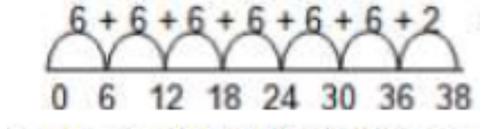
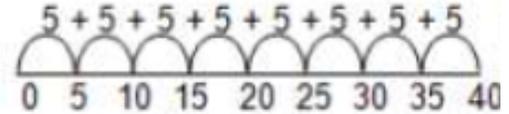
**Year 1**  
**Group and share small quantities**  
 Use objects, diagrams and pictures to solve problems involving both grouping and sharing i.e. 5 children share 15 sweets. Find half by sharing in to 2 equal groups. Count in 2s, 5s and 10s.

**Year 2**  
**Group and share using ÷ and =**  
 Use objects, Numicon, arrays and pictures  
 Know and understand grouping and sharing Use bead strings and then move on to making equal groups on a number line

**DIVISION**

evenly  
 cut  
 split  
 each  
 every  
 average  
 equal parts  
 out of  
 ratio  
 quotient

**Year 3**  
**Divide 2 digit numbers by a single digit number**  
 Use blank number line to show jumps  
 Some examples with remainders



24 divided into groups (chunks) of 6  
 There are 4 groups of 6 in 24

$$\begin{array}{r} 0812.125 \\ 8 \overline{)6497.000} \end{array}$$

**Year 5**  
**Divide up to 4 digits by a single digit < or = to 12**  
 Short division including remainders  
 Real life contexts to decide whether to round up or down

**Year 4**  
**Divide up to 3-digit numbers by a single digit**  
 Short division - initially with no remainder or carrying  
 Compare layout of short division to an array  
 Move on to examples with carrying and then finally with remainders

$$\begin{array}{r} 32 \\ 3 \overline{)96} \\ \underline{27} \\ 821 \\ 3 \overline{)821} \end{array}$$

$$\begin{array}{r} 036 \\ 16 \overline{)576} \\ \underline{-48} \\ 096 \\ \underline{-96} \\ 00 \end{array}$$

**Year 6**  
**Divide at least 4-digit numbers by single and 2-digit numbers (including decimals)**  
 Short division for dividing by a single digit number and learning how to express their answer as a decimal or a fraction  
 Long division for 2 digit numbers