Policy Statement for Calculations

Approved by Staff: Spring 2019

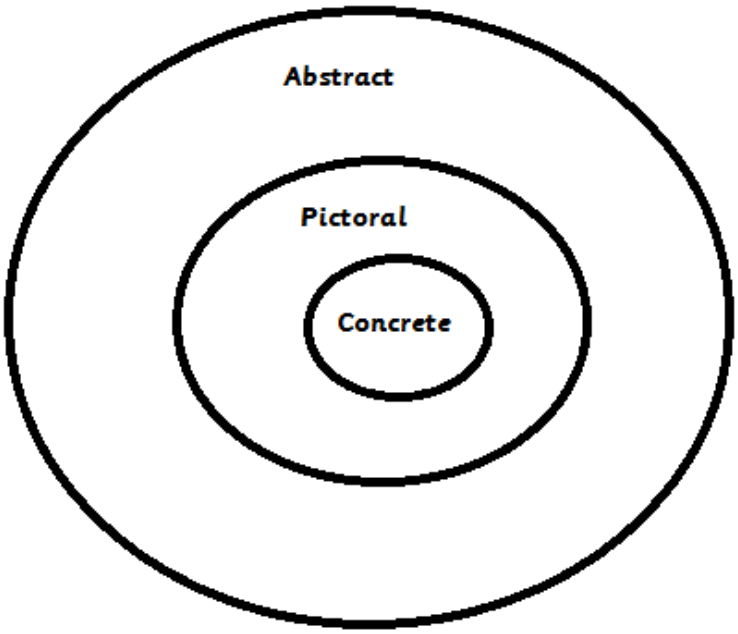
Approved by Governors: Spring 2019

To be reviewed: Spring 2020

Subject Leader: Mrs Heley

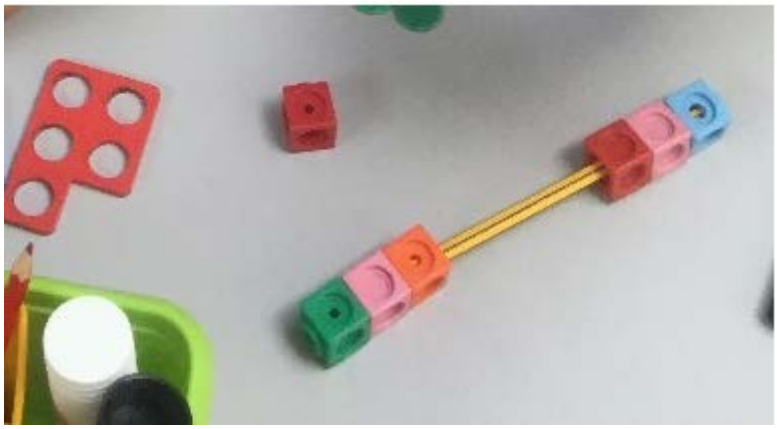
Spixworth Infants Calculation Policy

All calculations should be used with contexts.

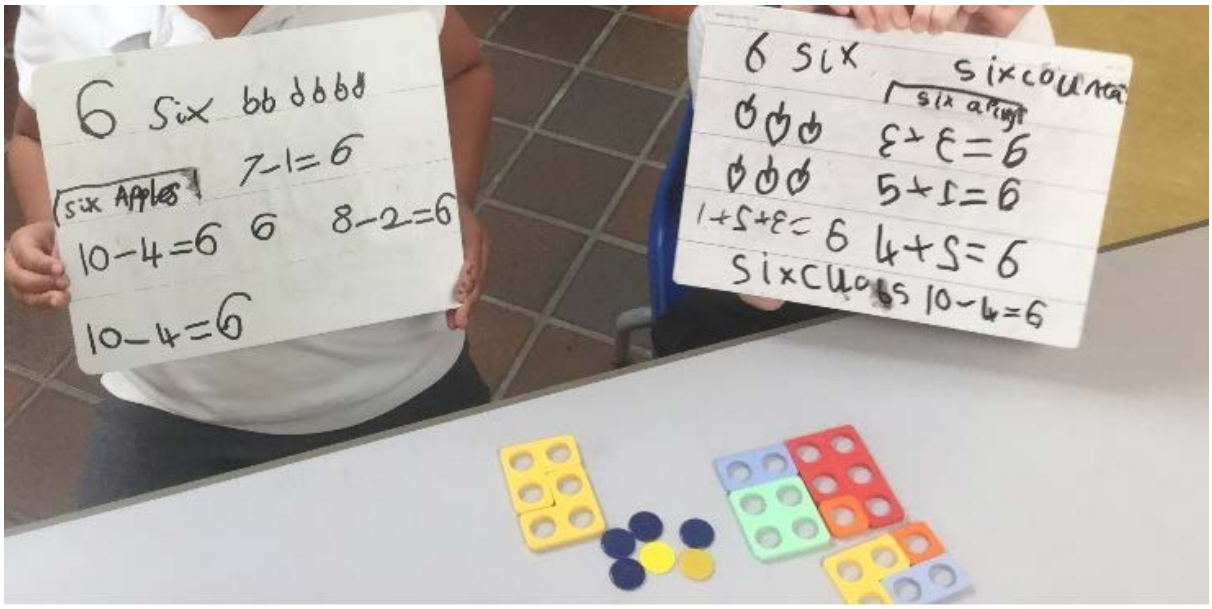


Addition + Subtraction

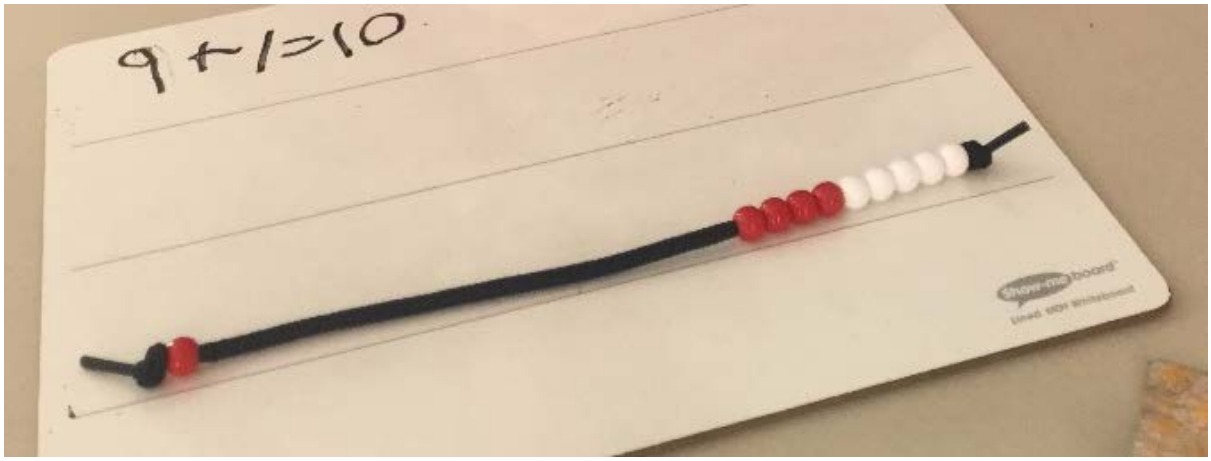
At Spixworth Infant we start all new concepts by using concrete manipulatives to support understanding. Addition and subtraction begin by children manipulating resources while learning the vocabulary associated with addition and subtraction. We teach both concepts alongside each other by use of various types of part part whole models, to embed the inverse relationship between the two operations. We use concrete alongside pictorial to consolidate understanding when looking at abstract calculations or learning to use pictorial methods such as number lines.



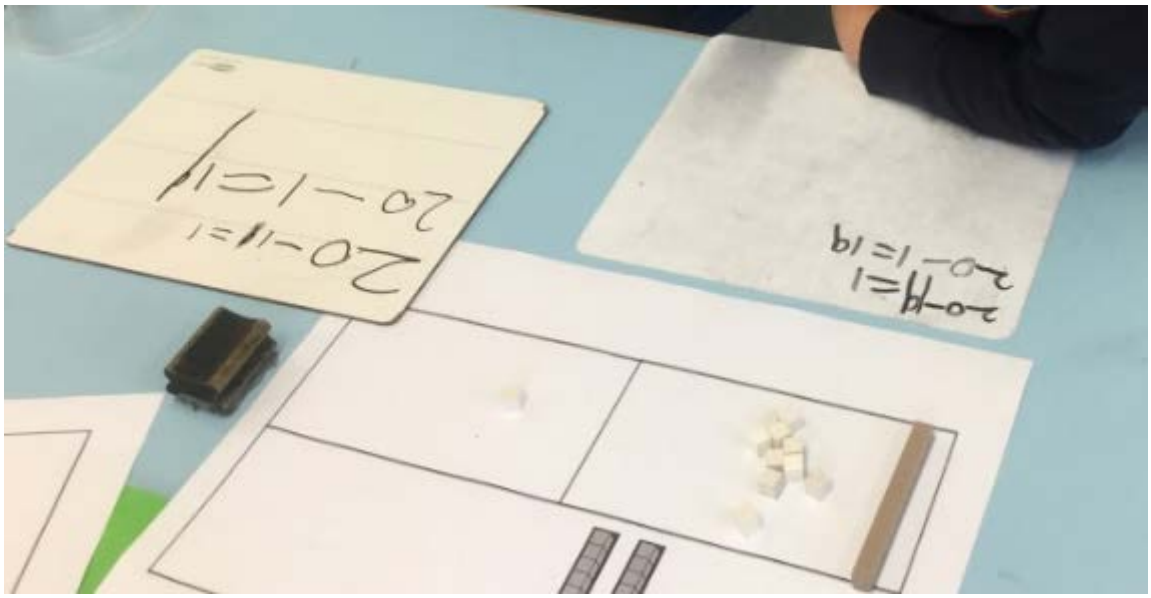
Concrete manipulatives used to understand number bonds

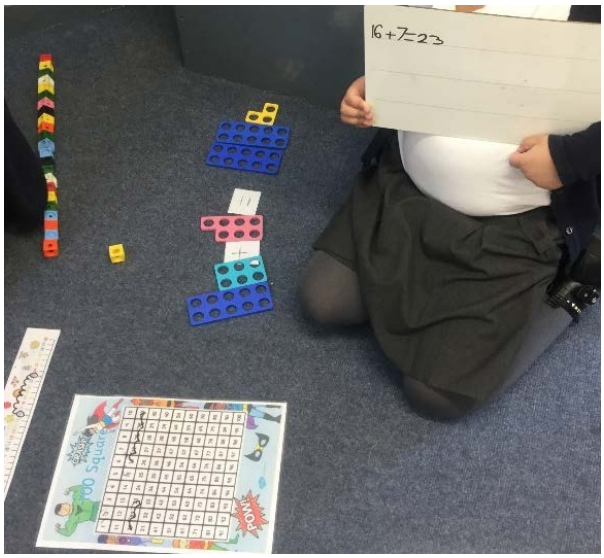


Manipulatives used alongside calculations and to help represent objects in word problems.

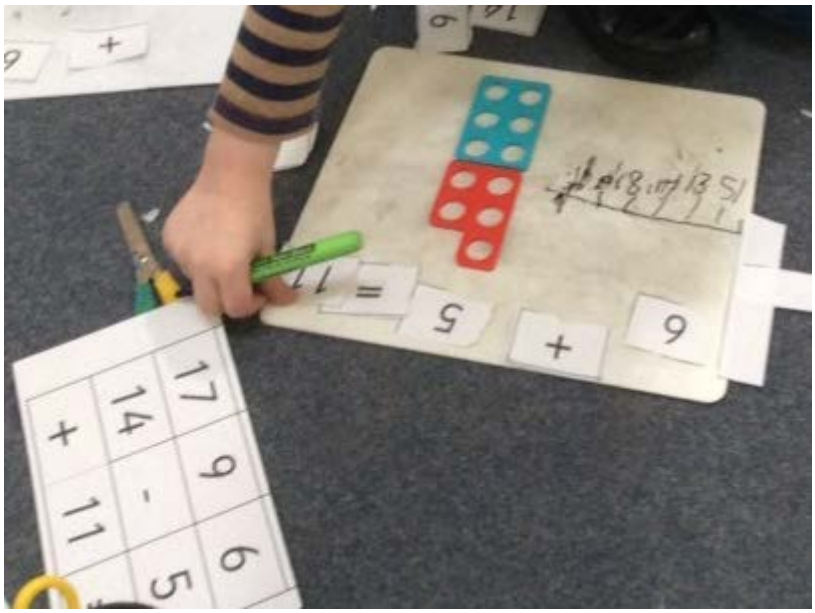


Manipulatives used alongside calculations



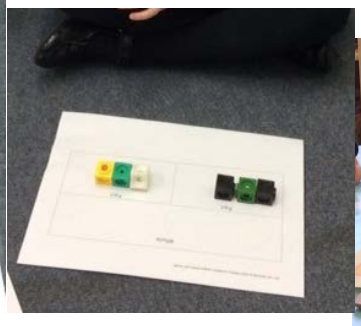


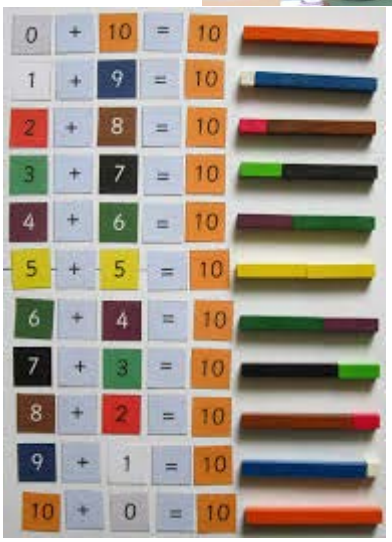
Scaffolding pictorial systems used to support understanding of calculations and structuring of number lines.

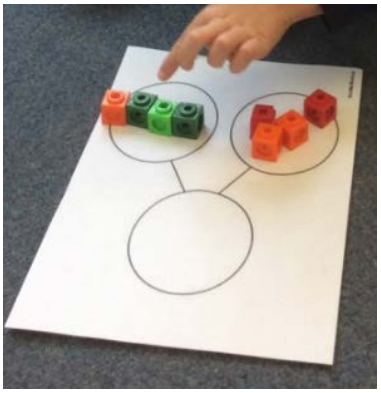


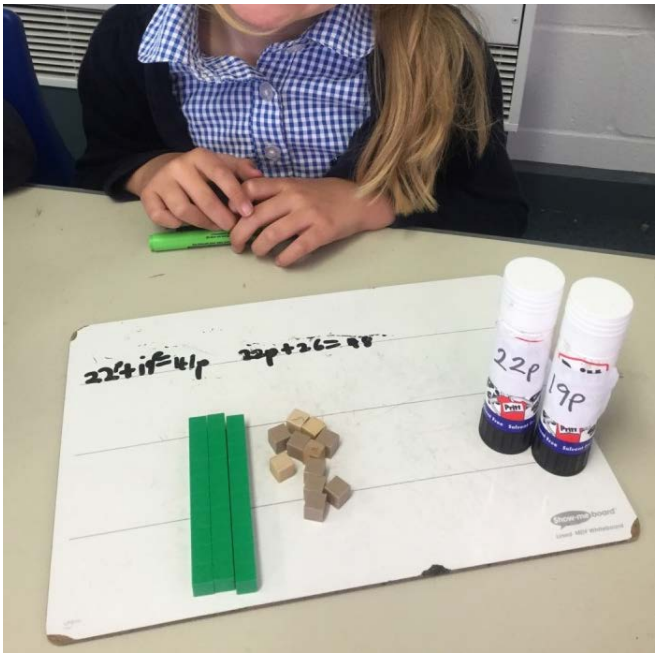
Addition and Subtraction are looked at together to solidify understanding.

Multiple types of concrete part part whole models are used to consolidate children's understanding of addition and subtraction.





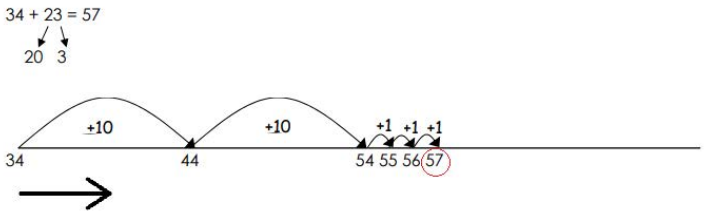
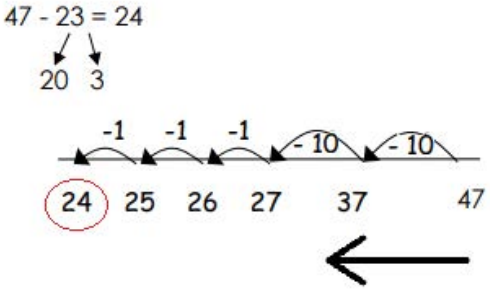


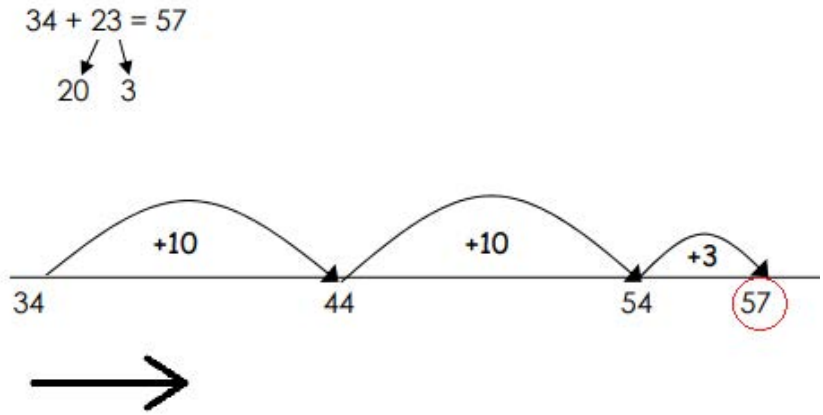
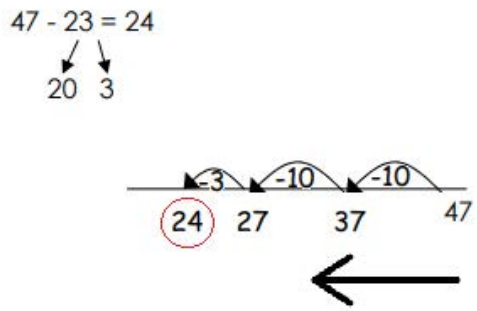
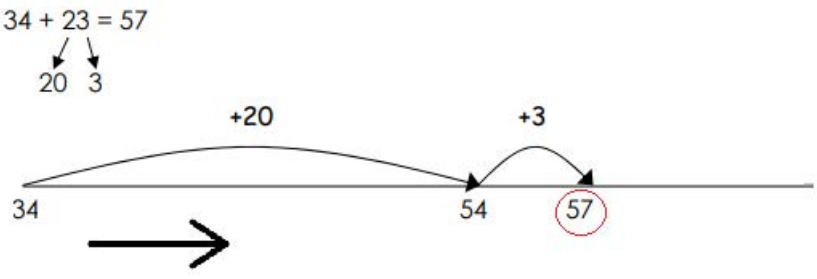
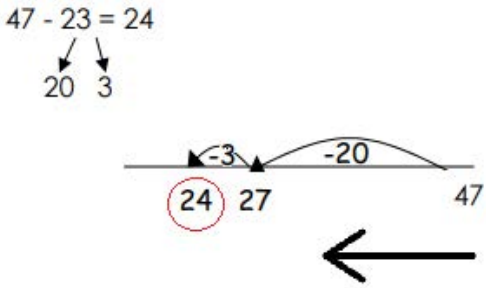


When children show they are ready, they are introduced to various pictoral systems to support their understanding of addition and subtraction. These are used alongside concrete and abstract.

At Spixworth Infant School our number lines are structured like this: We teach children to use their understanding of place value to manipulate number. We partition numbers when adding them on

in jumps the children are comfortable with as they progress in their understanding. These methods are used in conjunction with concrete manipulatives as needed. Children put an arrow in to show the direction they are moving along the number line and circle the answer before recording it to complete the sentence. In Year 2 we teach children to circle the symbol before they begin to ensure they remember which method they are using for which operation.

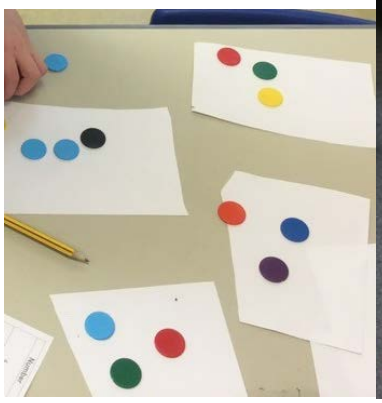
addition	subtraction
	

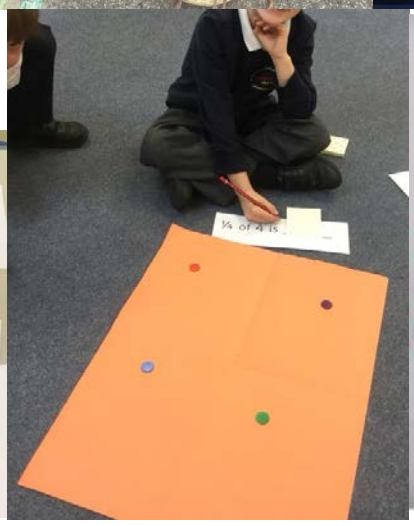
addition	subtraction
	
	

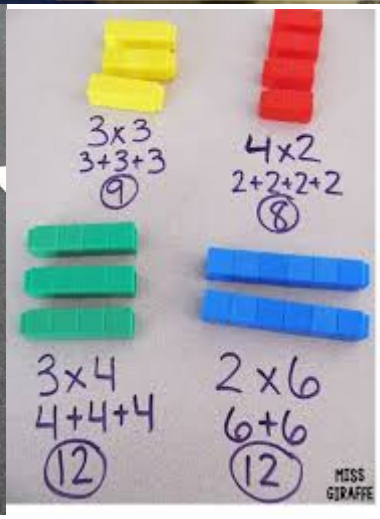
When children are ready for this level of mastery, we introduce the idea of partitioning ones, using our understanding of number bonds to 10. In subtraction and addition we look at this concept through the idea of “exchanging.” For example, we say “I have 10 ones, I will exchange this for 1 ten” or I need to subtract 5 ones, so I will exchange my 1 ten for 10 ones.”

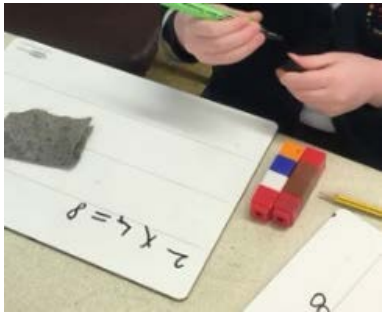
Multiplication and Division

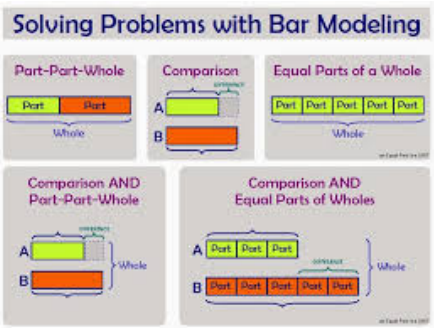
Like addition and subtraction, Multiplication and Division should be taught alongside each other to consolidate concepts based on. Signposting should be there to link fractions with these two operations as well as how repeated addition develops into multiplication. Times tables songs should be taught from EYFS to support children's multiplicative reasoning when they get to Key Stage 1.

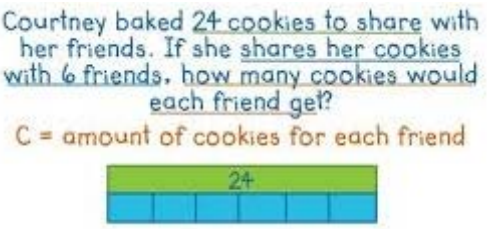






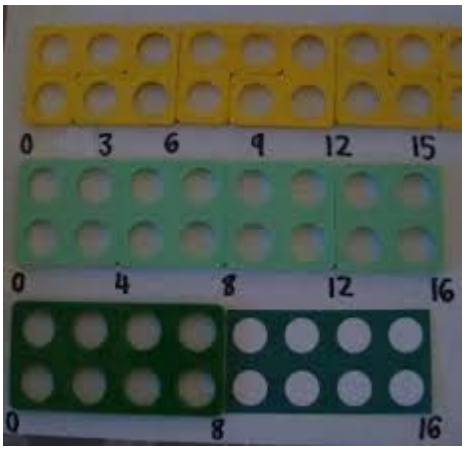




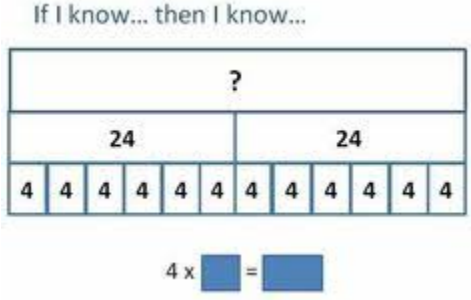


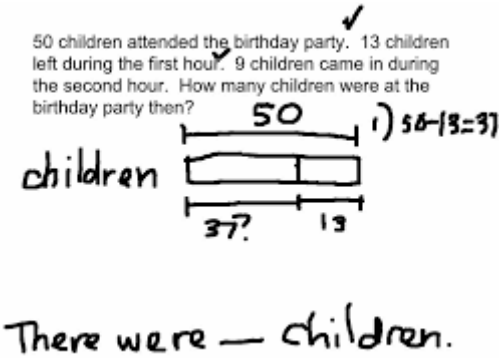
This model reinforces the link between multiplication and division as well as the link between multiplication and repeated addition.

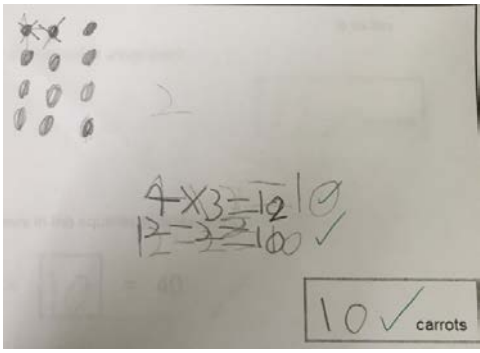
Multiplication and divison begin through the concept of doubling and halving. Sharing activities can also be used to support the understanding of multiplication and division but care must be put in to ensuring the correct language is used. When considering sharing mathematicaly, we must always use the term “share equally” to differentiate from the general concept of sharing which is not mathematical. Again, the bar model should be used to consolidate the link between these two concepts.



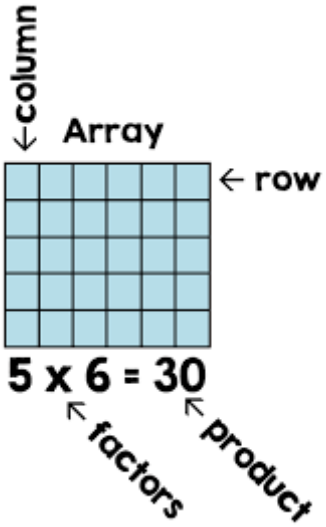
From this, links can be made between our additive fluency to support multiplicative fluency development.

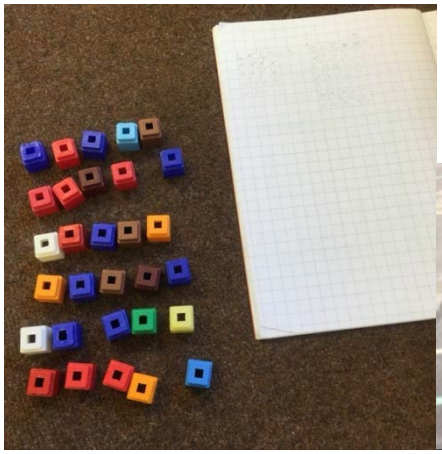


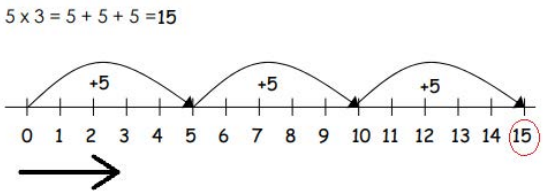
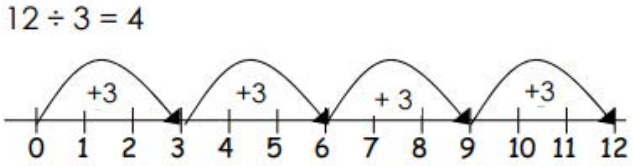




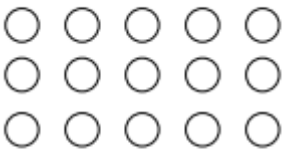
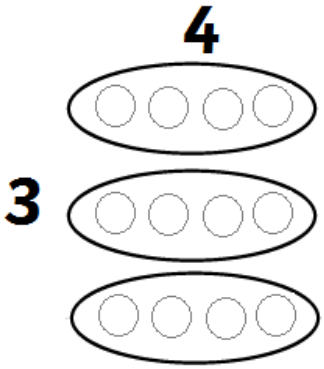
When children are ready, they will begin to record their working out pictorally, using their developing fluency to count in lots. For division, they will do the same, chunking their number and using their fluency.





multiplication	division
	

Multiplication can also be modelled by the use of arrays. This will support children's understanding of the communiative property as well as preparing them for the grid method. This can begin with practical manipulatives and move on to pictoral.

multiplication	division
 5 x 3 = 15 3 x 5 = 15	 12 ÷ 4 = 3

When children have had enough support with concrete and pictoral models, they will begin to develop multiplicative fluency. This will enable children to begin to make links, supported by their understanding of place value.

This can be modelled using practical apparatus.

	H	t	o
3 x 4			
30 x 4			

For information on the teaching of mathematics, please see Maths policy and related documents.