Parent maths workshop

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What are we going to cover today?

How we teach maths at Hammond

Calculation policy and what it shows

How calculation progresses

The language we use when talking about calculation

Key principles of maths at Hammond

Carefully sequenced curriculum – following what is known as a spiral model.

Explicit instruction and guided practice – ping-pong teaching

Use of representations to aid conceptual understanding

Precise use of vocabulary and speaking frames

Understanding over doing

Over-practice

Using and applying maths to be applicable in all areas of life

Calculation policy

Rationale

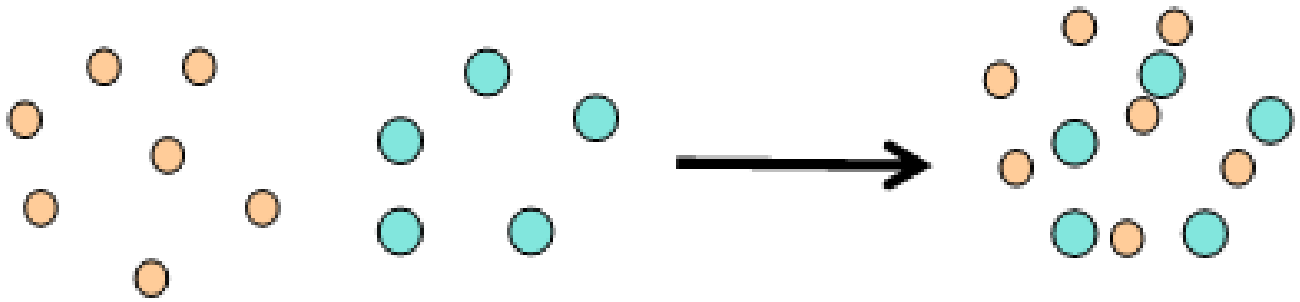
This policy outlines a model progression through written strategies for addition, subtraction, multiplication and division in line with the new National Curriculum commencing September 2014. Through the policy, we aim to link key manipulatives and representations in order that the children can be **vertically accelerated** through each strand of calculation. We know that school wide policies, such as this, can ensure consistency of approach, enabling children to progress stage by stage through models and representations they recognise from previous teaching, allowing for **deeper conceptual understanding and fluency**. As children move at the pace appropriate to them, teachers will be presenting strategies and equipment appropriate to children's level of understanding. However, it is expected that the majority of children in each class will be working at age-appropriate levels as set out in the National Curriculum 2014 and in line with school policy.

EYFS/Year 1

Combining two sets (aggregation)

Putting together – two or more amounts or numbers are put together to make a total

7 + 5 = 12



Count one set, then the other set. Combine the sets and count again. Starting at 1.

Counting along the bead bar, count out the 2 sets, then draw them together, count again. Starting at 1.

Partitioning (Aggregation model)

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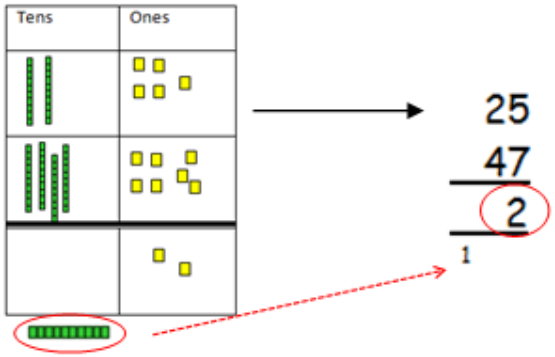
34 + 23 = 57

Base 10 equipment:

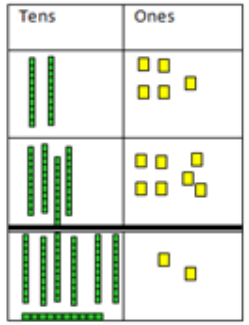
Children create the two sets with Base 10 equipment and then combine; ones with ones, tens with tens.

Year 4
Compact method

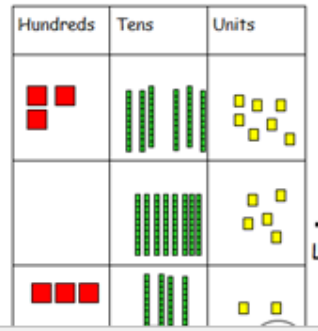


$$\begin{array}{r} 25 \\ 47 \\ \hline 2 \\ \hline 1 \end{array}$$

Leading to



$$\begin{array}{r} 25 \\ 47 \\ \hline 72 \\ \hline 1 \end{array}$$



Leading to

$$\begin{array}{r} 367 \\ +\ 85 \\ \hline 452 \\ \hline 11 \end{array}$$

□ + 70 = 485

10 + □ = 302

6.48 + 8.6 =

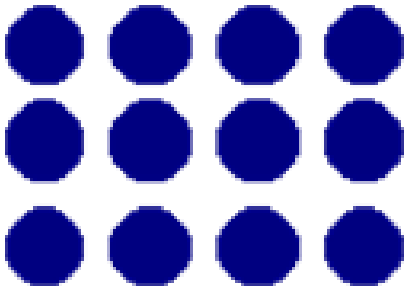
□

6,155 + 501 + 649 =

□

Division ÷

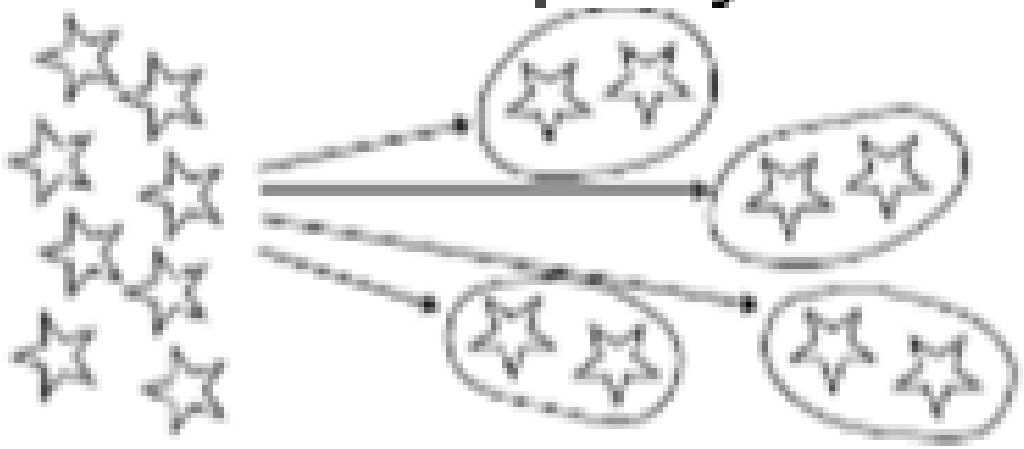
Part	Part	Part	Part
Whole			



Year 1 onwards

Sharing equally

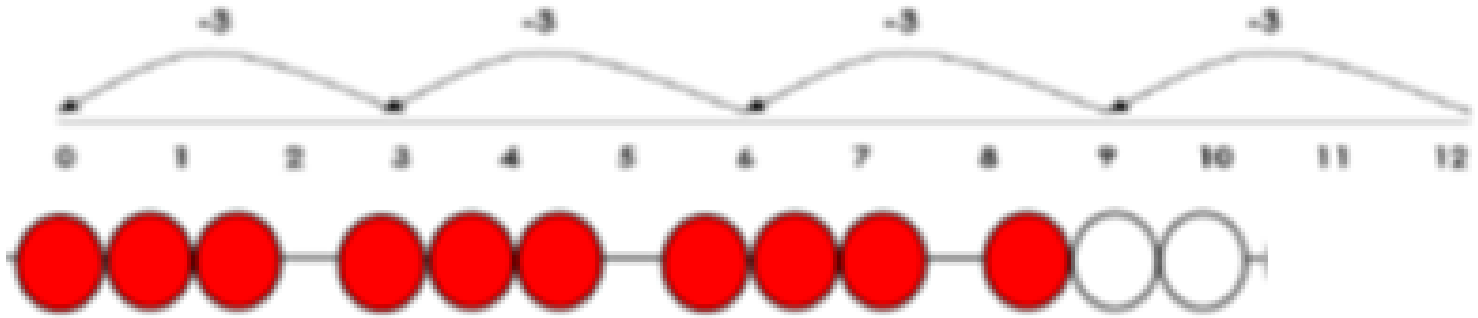
6 sweets get shared between 2 people. How many sweets do they each get? A bottle of fizzy drink shared equally between 4 glasses.



Year 2

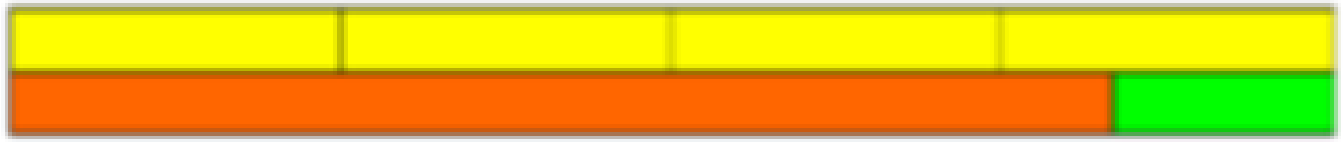
Repeated subtraction using a bead string or number line

12 ÷ 3 = 4



The bead string helps children with interpreting division calculations, recognising that 12 ÷ 3 can be seen as 'how many 3s make 12?'

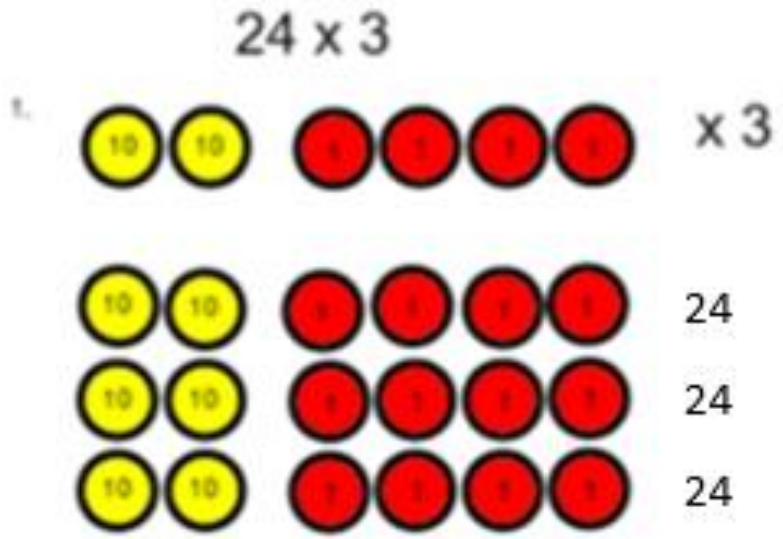
Cuisenaire Rods also help children to interpret division calculations.

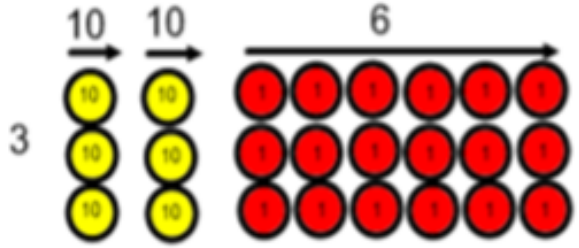


Arrays leading into chunking and then long and short division

Children continue to use arrays and partitioning where appropriate, to prepare them for the 'chunking' and short method of division. Arrays are represented as 'grids' as a shorthand version.

e.g. 78 ÷ 3 =





78 ÷ 3 = (30 ÷ 3) + (30 ÷ 3) + (18 ÷ 3) =

10 + 10 + 6 = 26

The vertical method- 'chunking' leading to long division

See above for example of how this can be modelled as an array using place value counters.

78 ÷ 3 =

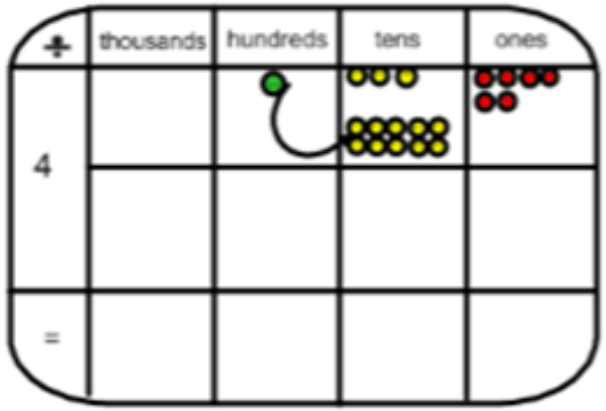
	78	
-	30	(10 x 3)
	48	
-	30	(10 x 3)
	18	
-	18	(6 x 3)
	0	

So 78 ÷ 3 = 10 + 10 + 6 =26

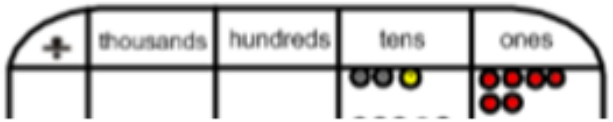
Short division — dividing by a single digit

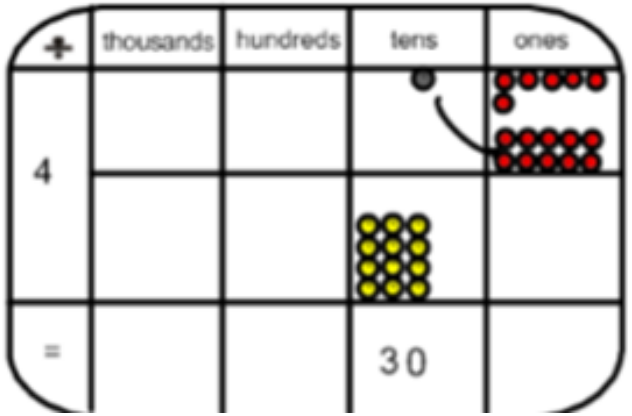
Whereas we can begin to group counters into an array to show short division working

136 ÷ 4



$$\begin{array}{r} 3 \\ 4\overline{)136} \end{array}$$





7 ☐ = 240 ÷ 8

8 840 ÷ 5 = ☐

$$21\overline{)672}$$

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