Newnham Croft Primary School

At Newnham Croft our children are at the heart of everything that we do. We believe that Newnham Croft is a special place – caring and inclusive – where the guiding principles are teamwork and respect for all. Newnham Croft is an aspirational school, where learning is exciting, challenging and creative. We aim to foster a sense of self belief and purpose in our children to equip them for the opportunities that life presents.

Mathematics Policy

Policy confirmed by the Teaching and Learning Committee of Newnham Croft Primary School on 29 January 2021, Kate Fry, Chair of TLC

Purpose of study

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

Aims

Our mathematics curriculum aims to ensure that all pupils:

- become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity, organised into apparently distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to science and other subjects.

The expectation is that the majority of our pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly

should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.

School curriculum

The programmes of study for mathematics are set out year-by-year for key stages 1 and 2, these are built around the expectations of the National Curriculum. Our school curriculum for mathematics is included in the topic webs that are available on the school's website (**http://www.newnhamcroft.cambs.sch.uk/website/topics/180449**).

Early Years - In Reception children can choose to access mathematical experiences every day, both in the indoor and outdoor learning areas. These focus on the early acquisition/recognition of numbers and shapes, number ordering and counting and building into a grasp of basic place value and simple computational skills. They also develop their understanding of pattern and order. Children learn in guided sessions and through child initiated learning, with maths activities always available and accessible.

KS1 - the principal focus of mathematics teaching in key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This involves working with numerals, words and the four operations, including with practical resources [for example, concrete objects and measuring tools].
At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching also involves using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.
By the end of year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage aids fluency.
Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

Lower KS2 - Years 3 and 4 - the principal focus of mathematics teaching in lower key stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers.
At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching also ensures that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It ensures that they can use measuring instruments with accuracy and make connections between measure and number.
By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.
Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.

Upper KS2 - Years 5 and 6 - the principal focus of mathematics teaching in upper key stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.
At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures consolidates and extends knowledge developed in number. Teaching also ensures that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.
Pupils should read, spell and pronounce mathematical vocabulary correctly.

Expectation of Maths sessions

Maths lessons incorporate the following elements:

- direct teaching and interactive oral work with the whole class and groups, sharing the objectives to be taught and modelling strategies for mental and written calculations;
- an emphasis on refining and practising mental calculation strategies;
- the progression of efficient written methods of calculation;
- the practical application of calculation in real life contexts;
- exploration of mathematical ideas through investigations, leading to generalisation and reasoning; allowing children to see the 'bigger picture' of mathematics;
- where possible cross-curricular links will be explored;
- a range of differentiated tasks for the pupils to choose based on their confidence, with all pupils engaged on the same area of mathematics;
- sharing success criteria to evaluate pupil progress.

Assessment and Feedback in Maths

Assessment is an integral and formative part of the planning process. We gather evidence for assessment in many ways through:

- planned opportunities for observation of learning;
- focused feedback (both written and verbal) based on clear learning objectives and success criteria;
- Early Learning Goals for Reception pupils;
- regular termly assessments for all year groups in the key curriculum elements for that year;
- work scrutiny;
- pupil self-assessment during lessons and at the end of a unit;
- end of Key Stage 1 and Key Stage 2 SATs;
- ongoing formative assessment by teaching staff;
- tracking pupil progress through FFT to inform teaching about the progress of all pupils;
- termly consultations and/or reports to parents with a review of individual pupil progress in the subject and mathematical targets.

Monitoring

The effectiveness of Maths provision will be monitored in ways such as:

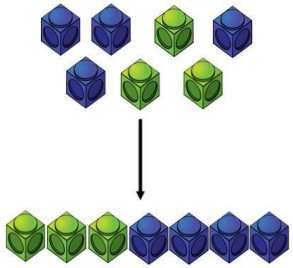
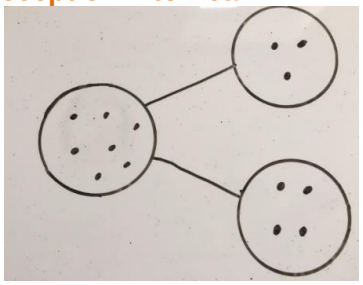
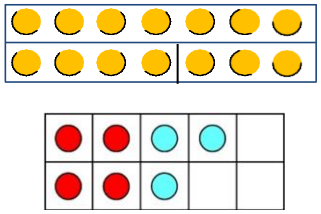
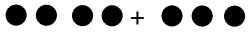
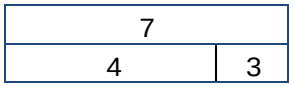
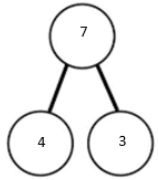
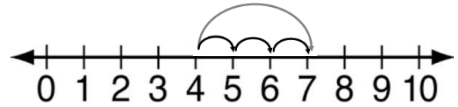
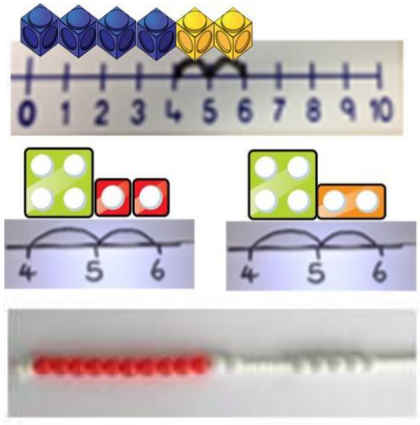
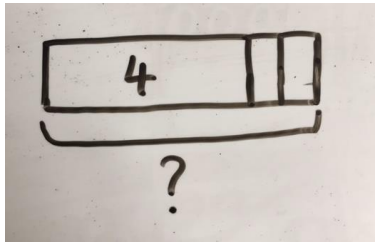
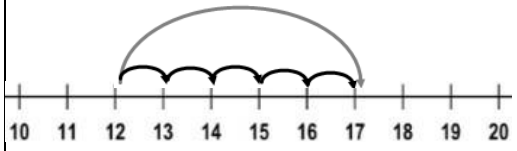
- monitoring of teaching and learning via Learning Over Time visits by the senior management team;
- lesson observations and learning walks by the deputy head & maths co-ordinator / headteacher
- governor monitoring;
- moderation of pupils' work;
- target setting and benchmarking.

Calculation policy: Addition

Key language: sum, total, parts and wholes, plus, add, altogether, more, ‘is equal to’ ‘is the same as’.

Calculation Policy

November 2020

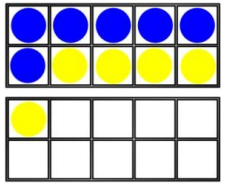
Concrete	Pictorial	Abstract
Combining two parts to make a whole (use other resources too e.g. eggs, shells, teddy bears, cars). **Reception into Year 1**  	Children to represent the cubes using dots or crosses. They could put each part on a part whole model too. **Reception into Year 1**   	4 + 3 = 7 Four is a part, 3 is a part and the whole is seven. **Reception into Year 1**   
Counting on using number lines using cubes or Numicon. **Reception into Year 1** 	A bar model which encourages the children to count on, rather than count all. **Reception into Year 1**  The technique below also works well for adding 3 single digit numbers. 	The abstract number line: What is 2 more than 4? What is the sum of 2 and 4? What is the total of 4 and 2? 4 + 2 **Year 1**  

Regrouping to make 10 (bridging); using ten frames and counters/cubes or using Numicon. This is an essential skill for column addition later.

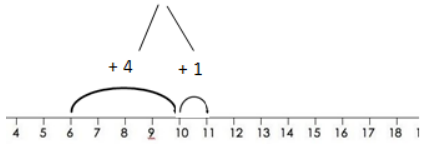
Reception into Year 1

Children to draw the ten frame and counters/cubes.

Year 1



6 + 5 = 10 + 1



Children to develop an understanding of equality e.g.

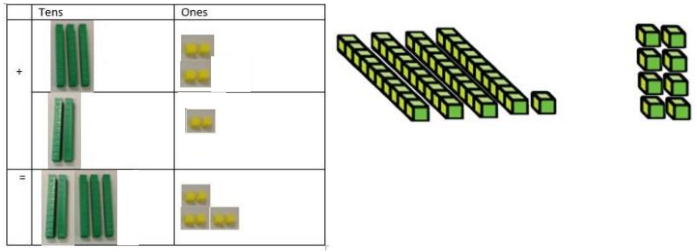
Year 1

6 + 5 = 11

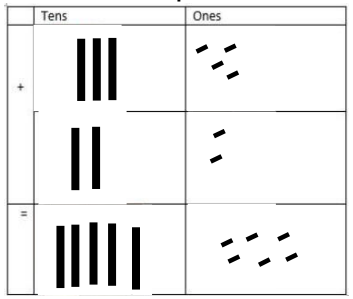
6 + 4 + 1 = 11

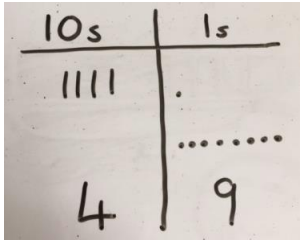
TO + O using base 10. **Year 1** Continue to develop understanding of partitioning and place value. 41 + 8

TO + TO without regrouping 34 + 22



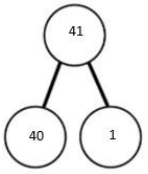
Children to represent the base 10 e.g. lines for tens and dot/crosses for ones. This also requires the children to be proficient in counting in tens first.





Year 1 into Year 2

Year 1 into Year 2



1 + 8 = 9

40 + 9 = 49

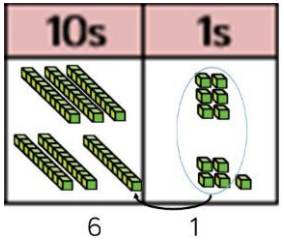
+	4	1
		8
	4	9

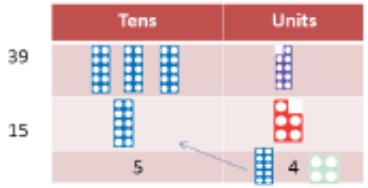
30 + 4 + 20 + 2 = 50 + 6

34 + 22 = 56

This can become move to 100 and 1000 easily

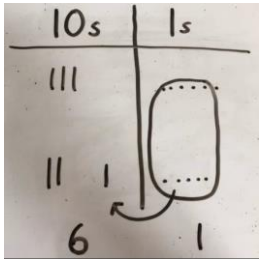
TO + TO using base 10 with regrouping. Continue to develop understanding of partitioning and place value. Examples are 36 + 25 and 39 +15



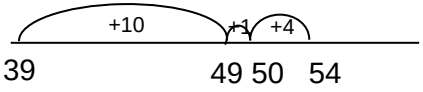


Year 2 into Year 3

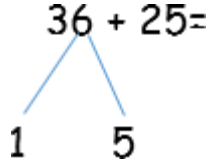
Children to represent the base 10 in a place value chart. **Year 2 into Year 3**



Alternative visual method



Looking for ways to make 10.



30 + 20 = 50

5 + 5 = 10

50 + 10 + 1 = 61

36

Formal method:

+25

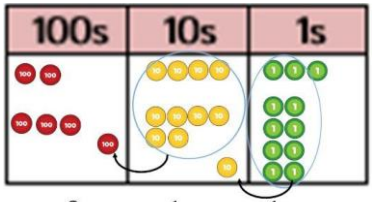
61

1

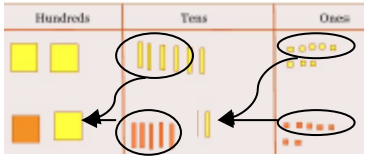
Year 2 into Year 3

Use of place value counters to add HTO + TO, HTO + HTO etc. When there are 10 ones in the 1s column- we exchange for 1 ten, when there are 10 tens in the 10s column- we exchange for 1 hundred.

Examples 243 + 368 and 268 + 157



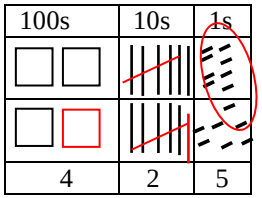
6 1 1

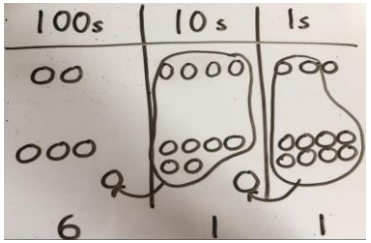


4 2 5

Year 3

Children to represent the counters in a place value chart, circling when they make an exchange.





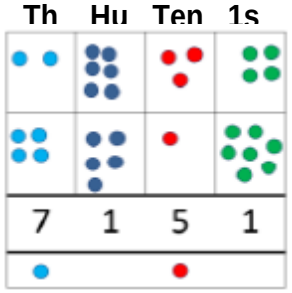
Year 3 into Year 4

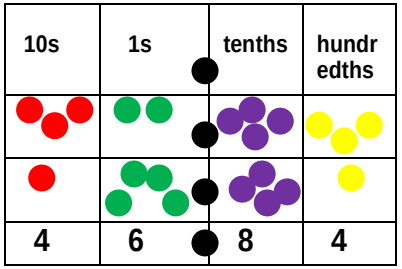
Year 3 into Year 4

$$\begin{array}{r} 243 \\ +368 \\ \hline 611 \\ \hline 1\ 1 \end{array}$$

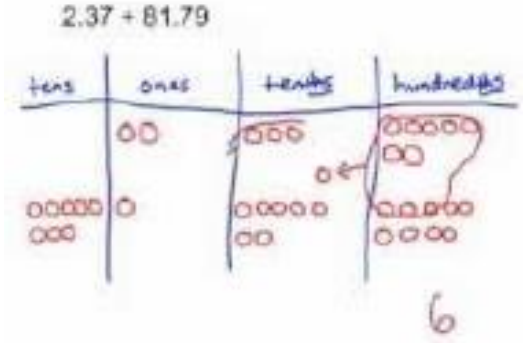
$$\begin{array}{r} 268 \\ +157 \\ \hline =425 \\ \hline 1\ 1 \end{array}$$

Place value counters and moving to 4 digits Year 4 **and expanding to use decimal points** Year 5





Year 4 into Year 5



Year 4

$$\begin{array}{r} 3517 \\ +\ 396 \\ \hline 3913 \\ \hline 1\ 1\ \end{array}$$

Year 5

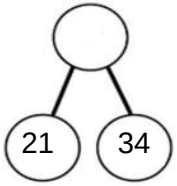
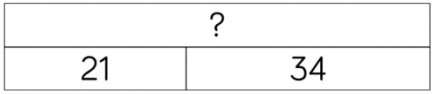
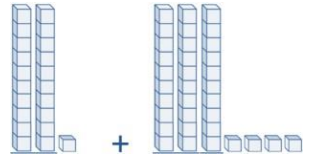
$$\begin{array}{r} £23.59 \\ +£7.55 \\ \hline £31.14 \\ \hline 1\ 1\ \end{array}$$

Year 6

$$\begin{array}{r} 81,059 \\ 3,668 \\ 15,301 \\ +\ 20,551 \\ \hline 120,579 \\ \hline 1\ 1\ 1\ 1\ \end{array}$$

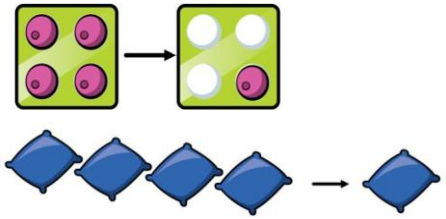
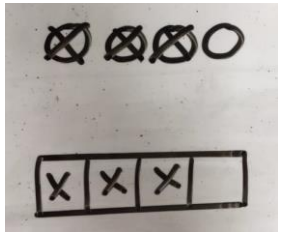
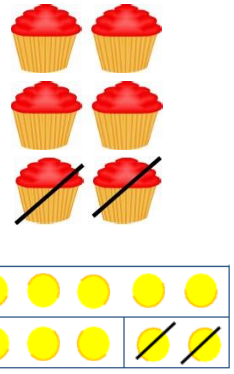
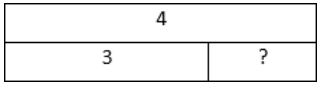
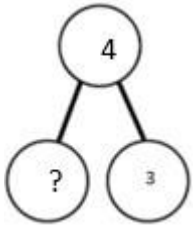
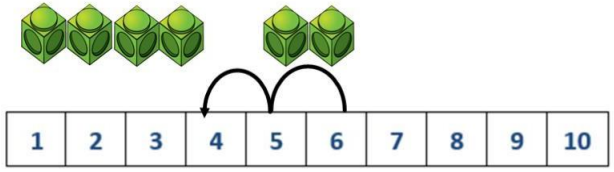
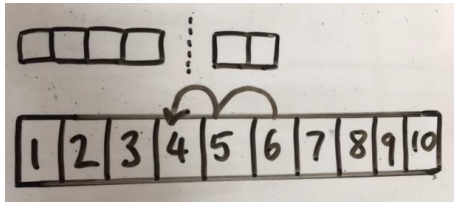
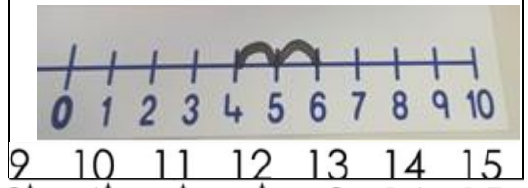
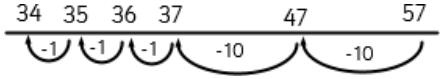
$$\begin{array}{r} 23.361 \\ 9.080 \\ 59.770 \\ +\ 1.300 \\ \hline 93.511 \\ \hline 2\ 1\ 2\ \end{array}$$

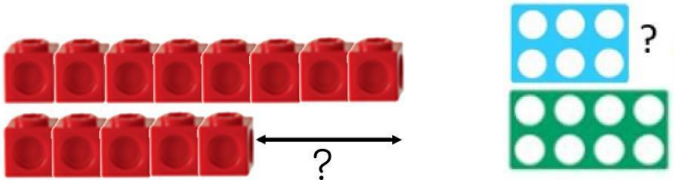
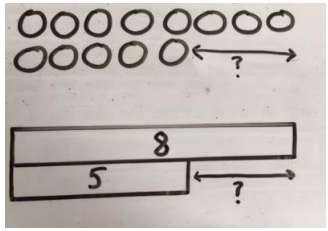
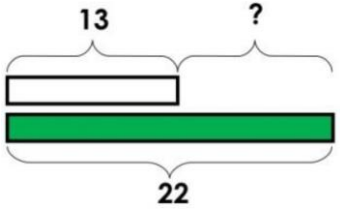
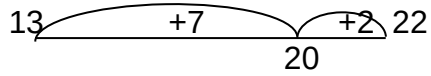
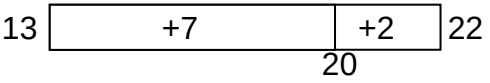
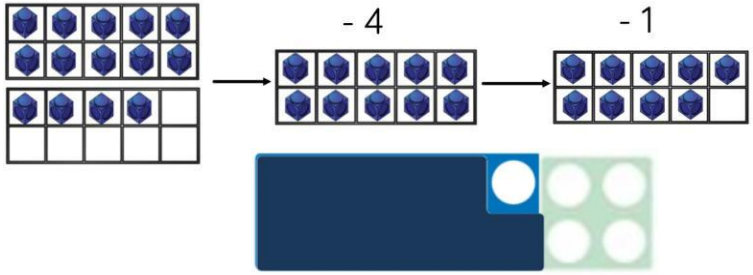
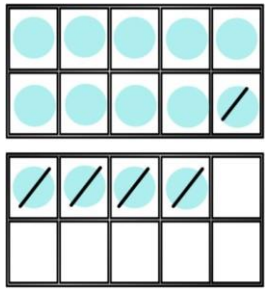
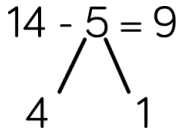
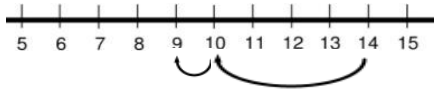
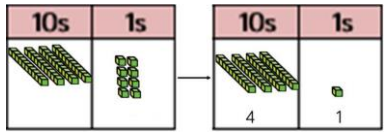
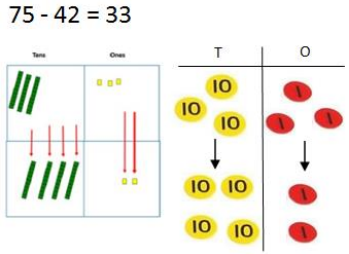
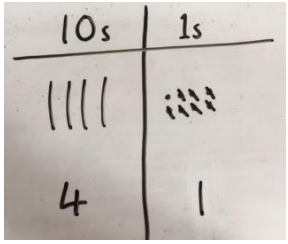
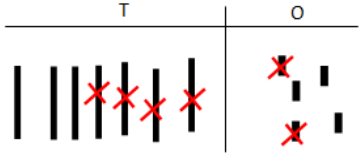
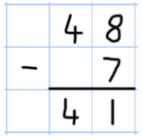
Conceptual variation; different ways to ask children to solve 21 + 34

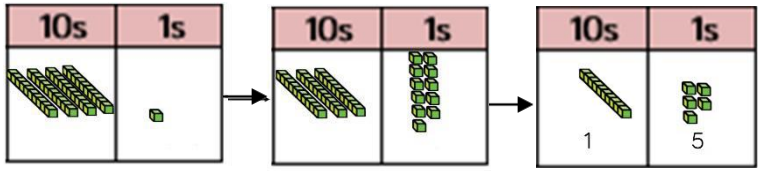
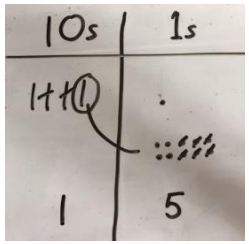
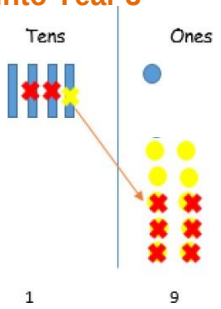
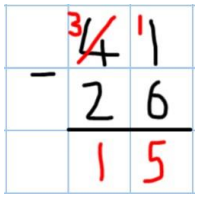
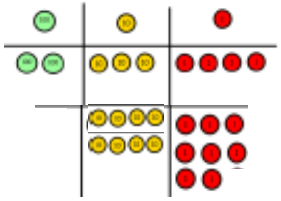
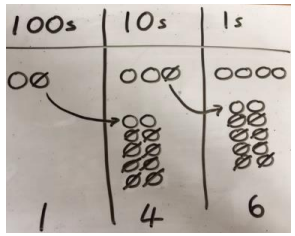
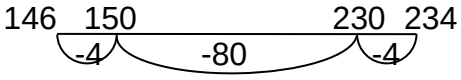
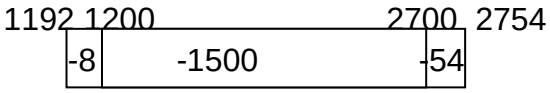
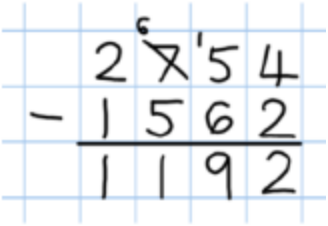
 	Word problems: In year 3, there are 21 children and in year 4, there are 34 children. How many children in total? 21 + 34 = 55. Prove it	**21 + 34 =** 21 +34 ____ Calculate the sum of twenty-one and thirty-four.	Missing digit problems:  

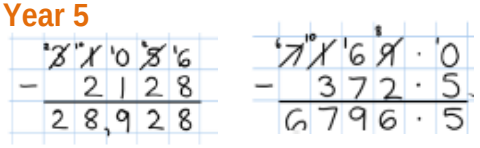
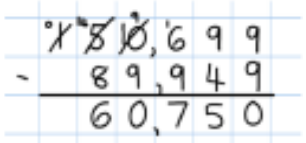
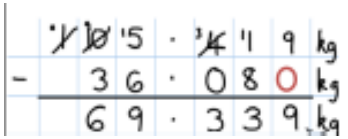
Calculation policy: Subtraction

Key language: take away, less than, the difference, subtract, minus, fewer, decrease.

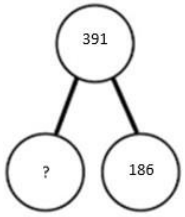
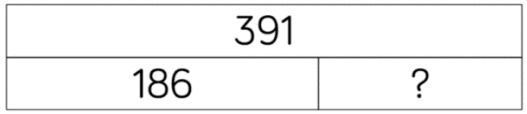
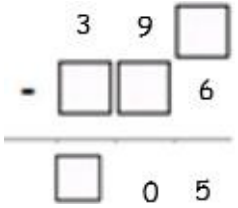
Concrete	Pictorial	Abstract
Physically taking away and removing objects from a whole (ten frames, Numicon, cubes and other items such as beanbags or toys). **Reception into Year 1** 4 – 3 = 1  6 - 2 = 4 	Children to draw the concrete resources they are using and cross out the correct amount. The bar model can also be used. **Reception into Year 1**  	**Reception into Year 1** **4- 3 =** **= 4 – 3**  
Counting back (using number lines or number tracks) children start with 6 and count back 2. **Reception into Year 1** 6 – 2 = 4   	Children to represent what they see pictorially e.g. **Year 1**  13 - 4 = 9  **Year 2,** Progress to two digit numbers, jumping in tens then ones, 57 - 23 = 34	Children to represent calculation on a number line or number track and show their jumps. Encourage them to use an empty number line. **Year 1**  **Year 2** 

Finding the difference (using cubes, Numicon or Cuisenaire rods, other objects can also be used). **Reception into Year 1** Calculate the difference between 8 and 5 or 8 and 6 by counting on from the lower number. 	Children to draw the cubes/other concrete objects which they have used or use the bar model to illustrate what they need to calculate. This works for larger numbers too. **Year 1 into Year 2**   This method is encouraged for when the children are subtracting numbers which are closer to the number being subtracted from e.g. 17-15=.	**Year 1 into Year 2** Find the difference between 8 and 5. 8 – 5 the difference is ☐ Find the difference number line  Bar model 
Making 10 using ten frames (bridging). 14 – 5 **Reception into Year 1** 	Children to present the ten frame pictorially and discuss what they did to make 10. **Reception into Year 1** 	Children to show how they can make 10 by partitioning the subtrahend. **Year 1**  14 – 4 =10 10 – 1 = 9 
Column method without exchanging **Year 2** using base 10. **Year 1** 48-7  75 - 42 = 33 	Children to represent the base 10 pictorially. **Year 1 into Year 2**  	Column method or children could count back 7. **Year 1**  75 - 42= 70 + 5 −40 + 2 30 + 3 = 33 **Year 2** Expanded Column method

Column method using base 10 and having to exchange. 41 – 26 **Year 2 into Year 3** 	Represent the base 10 pictorially, remembering to show the exchange. **Year 2 into Year 3**  	41 – 26= 30 40 + 1 5 – 20 + 6 10 + 9 = 19  Expanded method leading to the formal column method. Children must understand that when they have exchanged the 10 they still have 41 because 41 = 30 + 11. **Year 2 into Year 3**
Column method using place value counters. **Year 3** 234 – 88 	Represent the place value counters pictorially; remembering to show what has been exchanged. **Year 3** 	Formal column method. Children must understand what has happened when they have crossed out digits. **Year 3** 2 1 2 3 4 – 8 8 6
	Number line method (alternative method) **234 – 88 =** **Year 3 into Year 4**  **Bar model (alternative visual method)** **2754 – 1562 =** **Year 4** 	**Abstract Column method extended for 4 digits** **Year 4** 

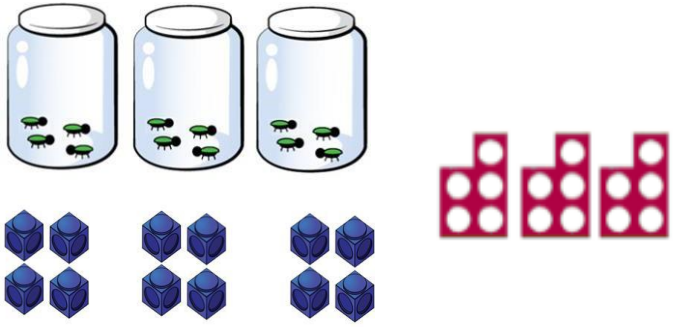
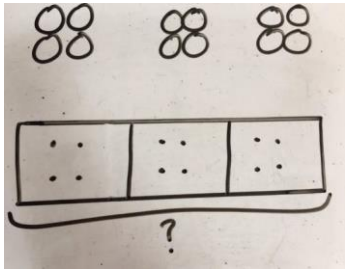
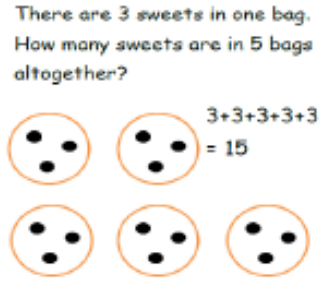
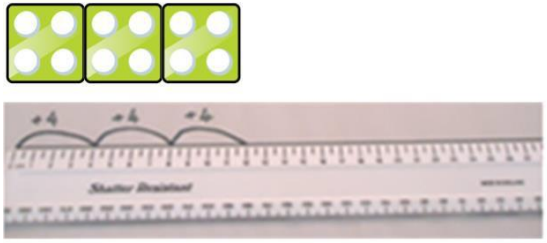
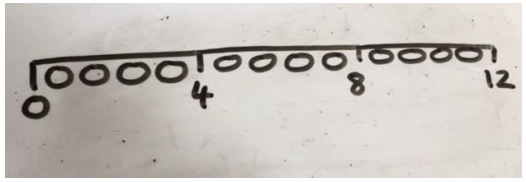
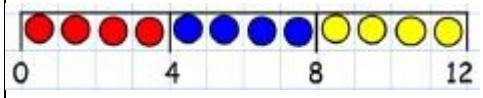
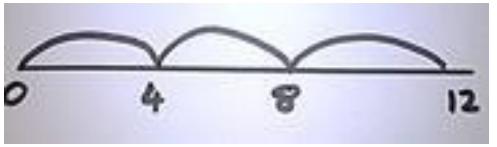
	31056 – 2128 = **Number line method (alternative visual method)** Year 5 28956 28928 28936 29056 31056 -8 -20 -100 -2000 **Bar model could equally be used**	**Abstract Column method extended for 5 digits and decimals** Year 5  **Increasingly large and complex numbers** Year 6  

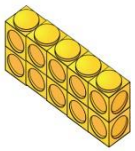
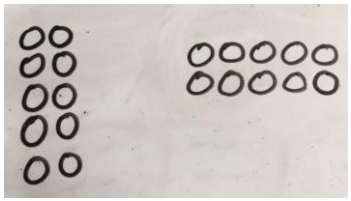
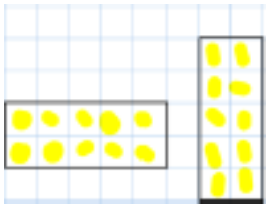
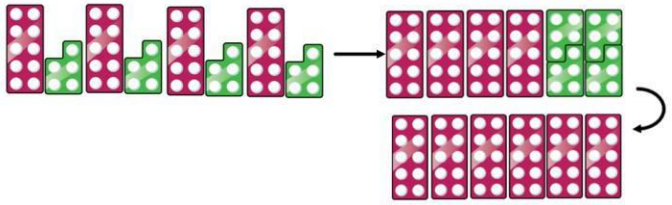
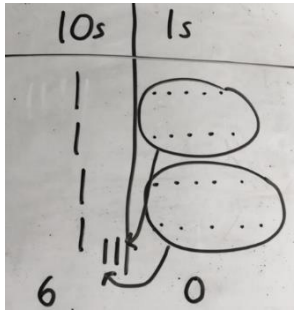
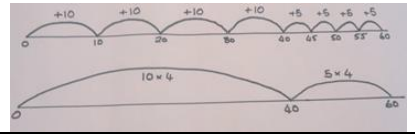
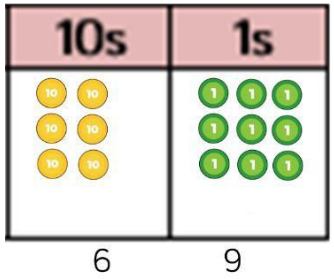
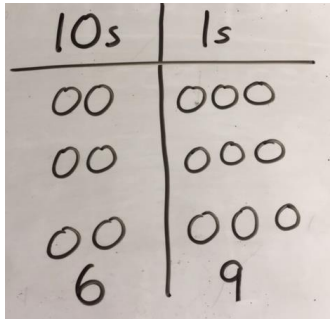
Conceptual variation; different ways to ask children to solve 391 - 186

  	Raj spent £391, Timmy spent £186. How much more did Raj spend? Calculate the difference between 391 and 186.	☐ = 391 – 186 391 -186 ___ What is 186 less than 391?	Missing digit calculations 

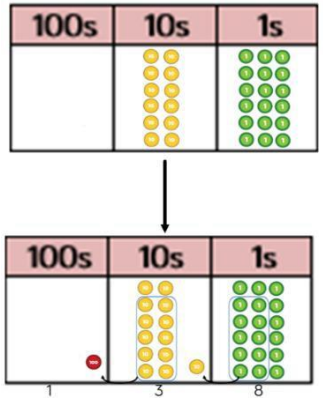
Calculation policy: Multiplication

Key language: double, times, multiplied by, the product of, groups of, lots of, equal groups.

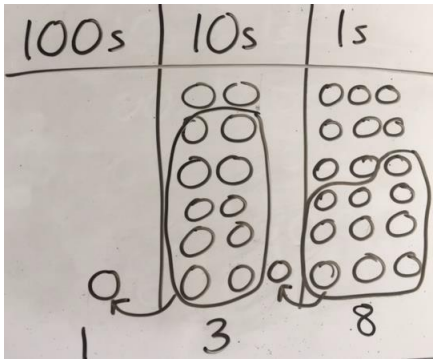
Concrete	Pictorial	Abstract
Repeated grouping/repeated addition Reception into Year 1 3 × 4 4 + 4 + 4 There are 3 equal groups, with 4 in each group. 	Children to represent the practical resources in a picture and use a bar model. Year 1  	Year 1 into Year 2 3 × 4 = 12 3 + 3 + 3 + 3 + 3 = 15 5 groups of 3 is 15 Write a number sentence to describe objects 
Number lines to show repeated groups- Year 1 into Year 2 3 × 4  Cuisenaire rods can be used too.	Represent this pictorially alongside a number line Year 1 into Year 2  	Abstract number line showing three jumps of four. Year 2 3 × 4 = 12 

Use arrays to illustrate commutativity counters and other objects can also be used. Year 1 into Year 2 2 × 5 = 5 × 2  2 lots of 5  5 lots of 2  3 lots of 5  12 lots of 2	Children to represent the arrays pictorially. Year 1 into Year 2  	Children to be able to use an array to write a range of calculations e.g. Year 2 10 = 2 × 5 5 × 2 = 10 2 + 2 + 2 + 2 + 2 = 10 10 = 5 + 5
Partition to multiply using Numicon, base 10 or Cuisenaire rods. Year 2 4 × 15 	Children to represent the concrete manipulatives pictorially. Year 2 	Children to be encouraged to show the steps they have taken. Year 2 4 × 15 10 5 10 × 4 = 40 5 × 4 = 20 40 + 20 = 60 A number line can also be used 
Formal column method with no exchanging Year 3 with place value counters (base 10 can also be used.) 3 × 23 	Children to represent the counters pictorially. Year 3 	Children to record what it is they are doing to show understanding. Year 3 3 × 23 20 3 3 × 20 = 60 3 × 3 = 9 60 + 9 = 69 23 × 3 69

Formal column method with exchanging **Year 3**
with place value counters. 6 x 23



Children to represent the counters/base 10, pictorially e.g. the image below. **Year 3 into Year 4**



Formal written method **Year 3 into Year 4**

Children to record the calculations they are making

23 x 6 =

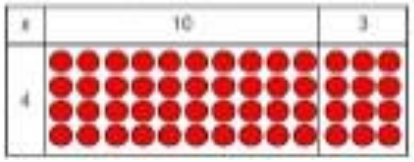
23
x 6
18 (6 x 3)
120 (6 x 20)
138

Leading to

6 x 23 =

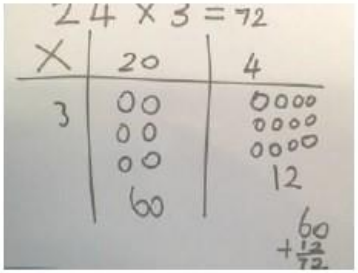
23
× 6
138
1 1

Grid method (alternative method) **Year 3 into Year 4**
Show the link with arrays to first introduce the grid method.



4 rows of 10
4 rows of 3

Children to represent the counters/base 10, pictorially **Year 3 into Year 4**



Children to start with multiplying by one digit numbers and showing the clear addition alongside the grid. **Year 4**

x	10	8
10	100	80
3	30	24

×	30	5
7	210	35

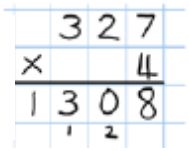
210 + 35 = 245

100+80+30+24= 234

When children start to multiply 3d × 3d and 4d × 2d etc., they should be confident with the abstract using either the Grid or Column methods. **Year 5**

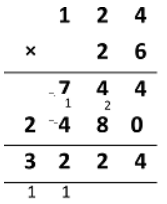
×	300	20	7
4	1200	80	28

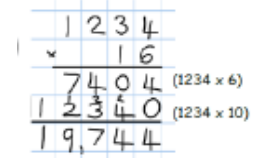
327
X 4
28
80
1200
1308

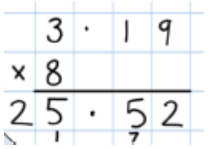


x	10	8
10	100	80
3	30	24

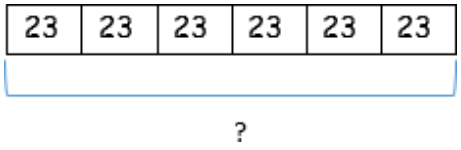
To get 744 children have solved 6 × 124.
To get 2480 they have solved 20 × 124.
Year 5 into Year 6





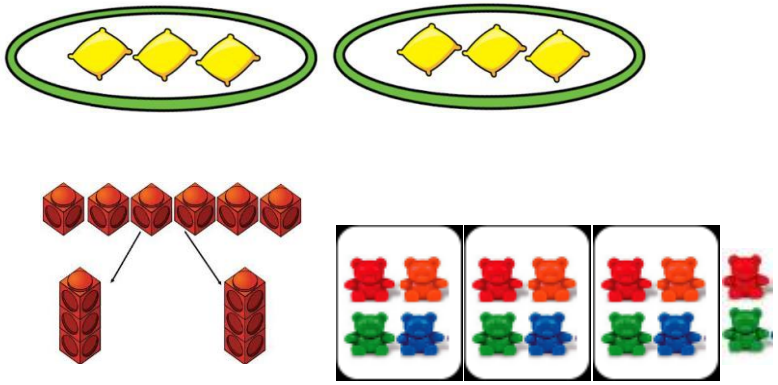
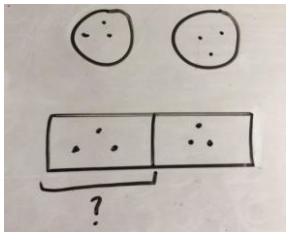
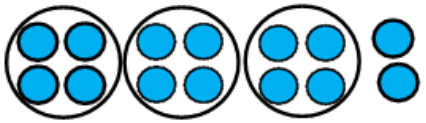
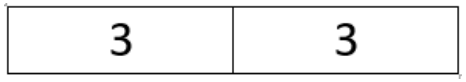
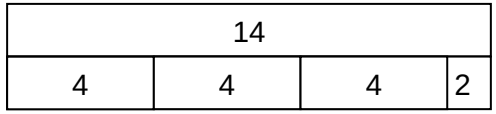
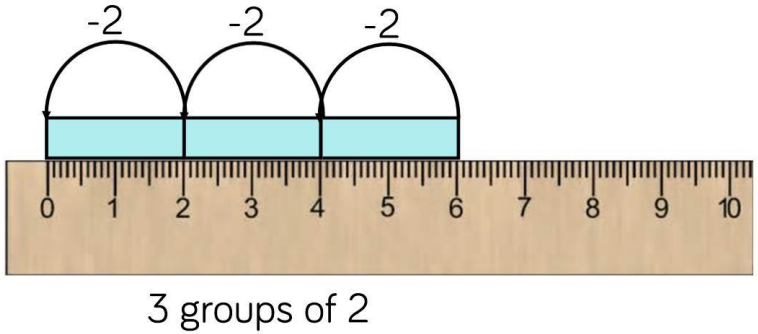
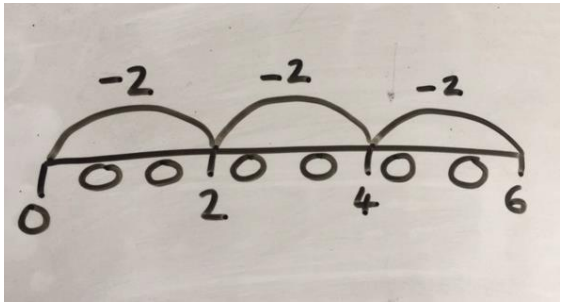
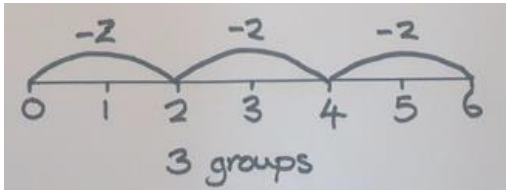


Conceptual variation; different ways to ask children to solve 6 × 23

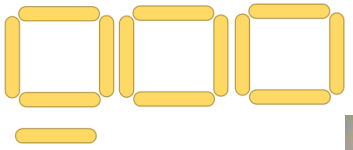
	Mai had to swim 23 lengths, 6 times a week. How many lengths did she swim in one week? With the counters, prove that 6 x 23 = 138	Find the product of 6 and 23 6 × 23 = = 6 × 23 6 × 23 23 × 6	What is the calculation? What is the product? 

Calculation policy: Division

Key language: share, group, divide, divided by, half.

Concrete	Pictorial	Abstract
Sharing using a range of objects. **Year 1 into Year 2** 6 ÷ 2 	Represent the sharing pictorially. **Year 1 into Year 2**  **Year 2** With remainders e.g. 14 ÷ 3 	6 ÷ 2 = 3 **Year 2**  Children should also be encouraged to use their 2 times tables facts. Bar Model for remainders 
Repeated subtraction using Cuisenaire rods above a ruler. 6 ÷ 2 **Year 1 into Year 2** 	Children to represent repeated subtraction pictorially. **Year 1 into Year 2** 	Abstract number line to represent the equal groups that have been subtracted. **Year 1 into Year 2** 

2d÷1d with remainders using lollipop sticks.
Cuisenaire rods, could also be used. **Year 2**
13 ÷ 4
Use of lollipop sticks to form wholes- squares are made because we are dividing by 4. This could equally be triangles if dividing by 3.

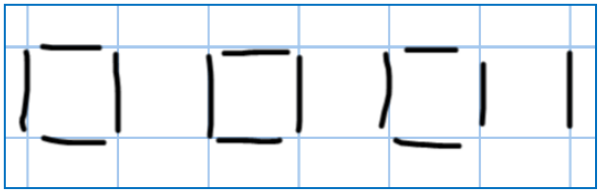


There are 3 whole squares, with 1 left over.

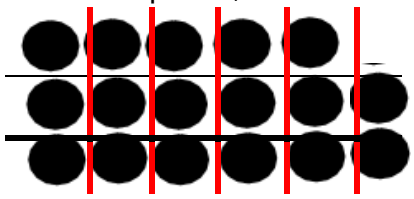
An array could also be used

17÷ 3

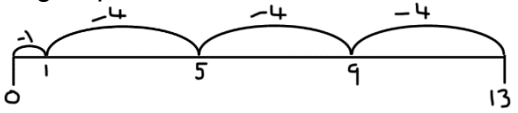
Children to represent the lollipop sticks pictorially.
Year 2



There are 3 whole squares, with 1 left over.

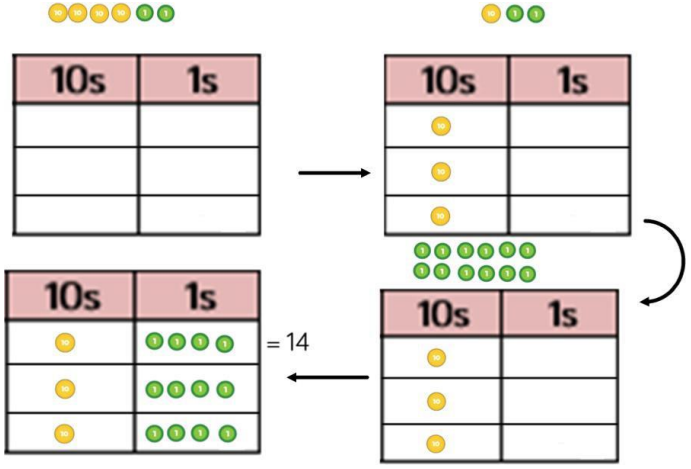


13 ÷ 4 – 3 remainder 1
Year 2 into Year 3
Children should be encouraged to use their times table facts; they could also represent repeated addition on a number line or in a bar model.
'3 groups of 4, with 1 left over'

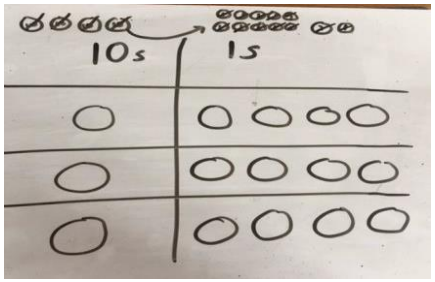


17 ÷ 3 = 5 rem 2

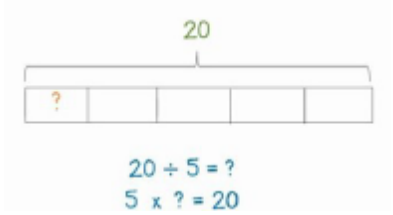
Sharing using place value counters.
42 ÷ 3 = 14
Year 3 into Year 4



Children to represent the place value counters pictorially.
Year 3 into Year 4



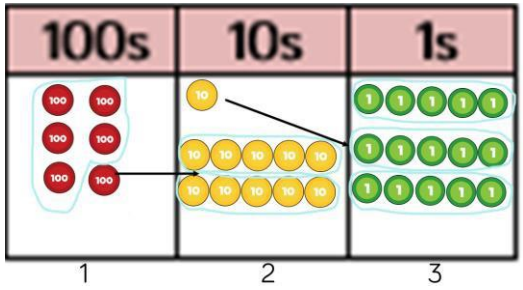
Continue to use bar modelling to aid problem solving (e.g.)



Children to be able to make sense of the place value counters and write calculations to show the process.
Year 3 into Year 4
42 ÷ 3
42 = 30 + 12
30 ÷ 3 = 10
12 ÷ 3 = 4
10 + 4 = 14

Short division using place value counters to group.
615 ÷ 5

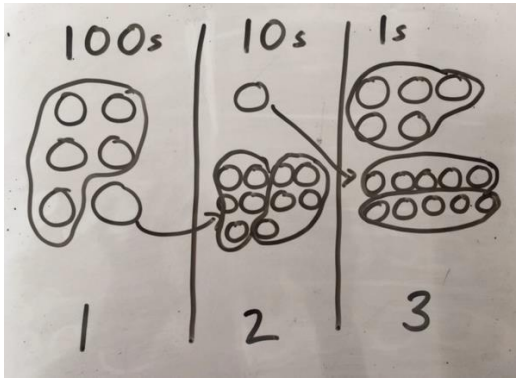
Year 4



1. Make 615 with place value counters.
2. How many groups of 5 hundreds can you make with 6 hundred counters?
3. Exchange 1 hundred for 10 tens.
4. How many groups of 5 tens can you make with 11 ten counters?
5. Exchange 1 ten for 10 ones.
6. How many groups of 5 ones can you make with 15 ones?

Represent the place value counters pictorially.

Year 4 into Year 5



Children to the calculation using the short division scaffold.

Year 5

$$5\overline{)615} = 123$$

Begin with divisions that divide equally with no remainder.

Move onto divisions with a remainder.

Then encourage children to convert remainders into fractions of the divisor.

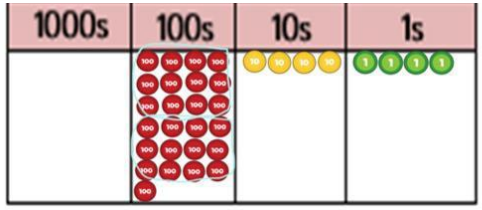
$$5\overline{)4\ 3\ 2} = 8\ 6\ \text{r}\ 2$$

Finally move onto decimal places. **Year 6**

$$35\overline{)5\ 1\ 1.\ 0} = 1\ 4.\ 6$$

Long division using place value counters 2544 ÷ 12 **Year 5 into Year 6**

We can't group 2 thousands into groups of 12 so will exchange them.



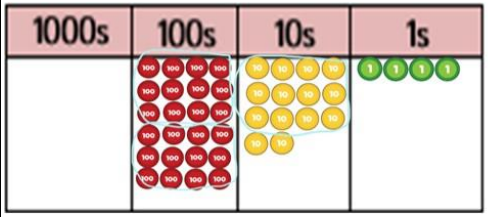
We can group 24 hundreds into groups of 12 which leaves with 1 hundred.

$$12\overline{)2544} = 02$$

24

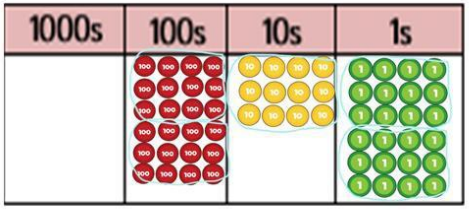
1

Year 5 into Year 6



After exchanging the hundred, we have 14 tens. We can group 12 tens into a group of 12, which leaves 2 tens.

$$\begin{array}{r} 021 \\ 12\overline{)2544} \\ 24 \\ \hline 14 \\ 12 \\ \hline 2 \end{array}$$



After exchanging the 2 tens, we have 24 ones. We can group 24 ones into 2 group of 12, which leaves no remainder.

$$\begin{array}{r} 0212 \\ 12\overline{)2544} \\ 24 \\ \hline 14 \\ 12 \\ \hline 24 \\ 24 \\ \hline 0 \end{array}$$

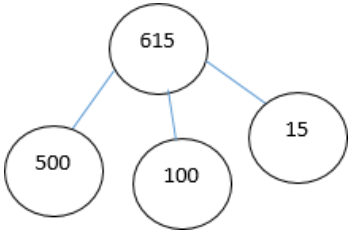
Example of remainder converted to a fraction and then to a decimal answer.

$$\begin{array}{r} 472 \\ 12\overline{)5671} \\ 48 \\ \hline 87 \\ 84 \\ \hline 31 \\ 24 \\ \hline 7 \end{array}$$

= 472 rem7 = $472\ ^{7}/_{12} = 472.5833$

Conceptual variation; different ways to ask children to solve 615 ÷ 5

Using the part whole model below, how can you divide 615 by 5 without using short division?



I have £615 and share it equally between 5 bank accounts. How much will be in each account?

615 pupils need to be put into 5 groups. How many will be in each group?

$$5\overline{)615}$$

615 ÷ 5 =

☐ = 615 ÷ 5

What is the calculation?
What is the answer?