Mathematics Statement of Intent

and Calculations Document 2020

Intent

- This statement describes our values and philosophy in relation to meeting the needs of all mathematical learners at Hazel Slade Academy. It outlines the framework within which all staff work and gives guidance on planning, teaching and assessment. It is designed to describe how the school intends to meet the needs of mathematics learners of all ages.
- In the first instance this will be through working within the Foundation Stage Curriculum using the Early Years Curriculum. From Y1 to Y6 statutory requirements of the National Curriculum in Mathematics will be met by fully implementing the National Curriculum objectives through the use of the White Rose Maths Hub Mastery documents.
- The policy is intended to be read in conjunction with the calculation policy which illustrates strategies and methods outlined in the national curriculum and that are taught from Reception to year 6. It is also important to read the Foundation Curriculum Framework which highlights the Early Learning Goals and the guide of progression in the Reception year.
- Mathematics is a broad structure that provides a way of viewing and understanding the world.
  Through the use of Mathematics, information can be • organised • manipulated • predicted • described • explained • communicated • questioned
- Mathematics should be taught across the curriculum to develop pupils' mathematical fluency. Confidence in numeracy and other mathematical skills is a precondition of success across the national curriculum, which we hope to achieve at Hazel Slade Academy.
- Through fully adopting the mastery approach of Maths hub, alongside meeting the three main aims of the new national curriculum for Mathematics, we want all children at Hazel Slade to develop into confident and competent mathematical thinkers, who are able to use maths in real life situations.

This policy document, having been presented to and agreed upon by the whole staff and the governing body, is available to all individual members of the teaching staff and for governors, parents or any other interested parties; e.g. the LA, support staff, visiting teachers; from the school office

Implementation

Hazel Slade Academy will endeavour to provide the highest possible quality of mathematical education. It will meet the requirements specified in the National Curriculum Orders and the will of the Headteacher, staff, parents and governors.
All children will be taught to develop their mathematical skills to the best of their ability. This school will aim to provide a high standard of mathematical education and will promote knowledge, skills and understanding at all levels. The target is for all children to reach their age related expectations in numeracy to prepare them for the world around them.
The school will offer a caring, supportive environment to enable the children to reach their potential as mathematicians from the educational provision available.
In order to achieve this, our aims as teachers are:

- to encourage an enthusiastic and inquisitive attitude to mathematics
- to foster high standards of achievement in mathematics

• to develop pupils' numeracy and mathematical fluency, reasoning and problem solving in all subjects so that they understand and appreciate the importance of mathematics.
• to teach children to apply arithmetic fluently to problems, understand and use measures, make estimates and sense check their work.
• to enable children to apply their geometric and algebraic understanding, and relate their understanding of probability to the notions of risk and uncertainty.
• to help children understand the cycle of collecting, presenting and analysing data.
• to teach children to apply their mathematics to both routine and nonroutine problems, including breaking down more complex problems into a series of simpler steps.
• to equip children with strategies to enable them to apply mathematics to real and unfamiliar situations within and beyond the classroom
• to develop an appreciation of the intrinsic value and fascination of mathematics as well as its usefulness in life
• to be fluent mentally at basic 4 operation number sentences
Thus children will be able:
• to develop a positive and confident attitude to mathematics
• to make an active contribution to their own learning, by developing the skills of independence and enquiry
• to become confident and competent working with mathematics
• to develop an understanding of the ways in which information is gathered and presented
• to become thinkers and problem solvers
• to develop a clear understanding of the language of mathematics • to develop logical thinking and reasoning, enabling them to record work clearly and in a variety of ways
• to develop the skills, knowledge and understanding needed in daily life

The national curriculum identifies three main aims in the primary phase:
• 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.

The national curriculum states 'Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas.' Therefore, it is organised into distinct domains. However, pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems.
These domains for KS1 are:

- Number and place value
- Addition and subtraction
- Multiplication and division
- Fractions
- Measures
- Geometry: properties of shape
- Geometry: position and direction
- Statistics (Year 2)

These domains for KS2 are:

- Number and place value
- Addition and subtraction
- Multiplication and division
- Fractions (including decimals and percentages)
- Ratio and proportion (Year 6)
- Measures
- Geometry: properties of shape
- Geometry: position and direction
- Statistics
- Algebra (Year 6)

The distinct domains highlight the important areas of mathematics children need to learn to make effective progress. Through combining the national curriculum aims and the Math hub principles our objectives are:

- A dedicated daily mathematics lesson is planned in each class, which will last for an hour KS1 and KS2. In the Foundation Stage there a daily focus lesson which will last for at least 20 minutes, alongside opportunities for mathematical activities daily through continuous provision.
- Lessons are well structured, lively and delivered at a good pace. • Lesson are structured to embed mathematical understanding through concrete, pictorial and abstract representation.
- Variation will be used to broaden the children's exposure to the learning objectives in a wide range of context to ensure deeper understanding of concepts.
- The foundations of mental calculation and recall of number facts are established thoroughly through daily starters which consolidate mental recall and informal/written calculations.
- Teaching, questioning and level of support is differentiated children so that the children are all working towards the same learning objective appropriate to their age group.
- All children will be exposed to challenge through tasks and questioning including further mastery standard problem solving activities for gifted and talent pupils.
- Time is given in other subjects for pupils to develop and apply their mathematical skills. Opportunities in Science are evident through floor books, lesson starters and investigations.
- Children will actively take part and are enthusiastic during their maths lessons and will develop an appropriate mathematical vocabulary as modelled by the teachers using

guidance from the vocabulary specified in the national curriculum.

Teaching through topics

Most mathematical concepts lend themselves perfectly to subjects outside of maths lessons. It is important that these links are in place so children deepen their understanding and apply maths across the curriculum.

Links to other curriculum areas:

- Statistics- using graphs in Science, collecting data in Computing, comparing statistics over time in History, drawing graphs to collect weather data in Geography.
- Roman Numerals- taught through the topic of Romans within History
- Geometry (shape and symmetry)- using shapes within tessellations when looking at Islamic art (R.E), using shapes within art (Kandinsky), symmetry within art
- Measurement- reading scales (science, design technology),
- Co-ordinates- using co-ordinates with maps in Geography.
- Written methods of the four operations- finding the time difference between years in History, adding or finding the difference of populations in Geography, calculating and changing recipes in food technology.
- Direction- Programming in ICT

.

Equal Opportunities

All pupils will have equal opportunity to reach their full potential across the mathematics curriculum regardless of their race, gender, cultural background, ability or physical disability.

Inclusion

The school's equal opportunities policy applies to the teaching of mathematics as to all other subjects.

Environment

It is important that the classroom environment supports both the learning and teaching of mathematics.

The school aims to provide a mathematically stimulating environment:

- through the development and use of working walls to support learning and teaching in a lesson or series of lessons.
- through interactive displays that promote mathematical thinking and discussion
- through displays of pupils' work that celebrate achievement
- by providing a good range of resources for teacher and pupil use.

.

In every classroom, resources such as number lines, hundred square, place value charts and multiplication squares, Base ten are displayed / available as appropriate and used for whole

class or individual work.

Homework

We recognise the importance of making links between home and school and encourage parental involvement with the learning of mathematics (explain how this is done).
Homework provides opportunities for children

- to practise and consolidate their skills and knowledge,
- to develop and extend their techniques and strategies, and
- to share their mathematical work with their family
- to prepare for their future learning.

Impact

Maths lessons consist of an initial 45 minute lesson which will consist of a warm up, teaching time, a fluency, reasoning and problem solving activity at the appropriate level for the age of the pupils (i.e. all three areas might not appear in one lesson). This is then followed by an additional 20 minutes session in which Bronze, Silver and Gold Activities are done, this acts as same day intervention for pupils.

Bronze

"I really haven't understood this, please can you go over it again."

This is when the teacher spend additional time teaching pupils, evidence of this should be seen in books.

Silver

"I'm nearly there, but I could do with just doing a few more to make sure I have got it."

This is when the teacher sets an activity that consolidates learning

Gold

"I have really understood this, please can I have a challenge so I can apply my learning."

This is when the teacher sets a challenging extension to learning in order to assess full understanding of the concept.

Periodic assessments

These take place half termly. Teachers assess key ideas, End of Year Expectations, targets and areas of concern that have been covered during these units. Pupil progress meetings are held termly.

Intervention programmes

Intervention programmes are used to support children or groups of children that have been identified as at risk of not reaching age related expectations in order to accelerate their progress with the aim to help the children to get back on track. These include the Springboard, Small Steps from White Rose, Core Maths Times Tables programme.

Monitoring of the standards of children's work and of the quality of teaching in mathematics is the responsibility of the mathematics subject leader, the Headteacher and the class teacher.

The main aspects of the mathematics subject leader involve:

- providing leadership and direction in Mathematics
- ensuring the national curriculum is implemented effectively
- working closely with staff, offering guidance, support, leadership and arranging in-service as appropriate
- scrutinising books frequently, completing half termly health checks and providing whole staff or individual feedback when necessary.
- scrutinising the results of termly / annual assessments throughout the school and providing feedback
- analysis of KS1 and KS2 SAT results, pupil response, teacher assessments and other standardised assessments
- managing, storing and updating resources, following a whole school audit
- monitoring and evaluating the quality of teaching and learning throughout the school in Mathematics
- monitoring pupil opinions and feedback yearly (pupil voice) • liaising with the governor responsible for maths, other schools and the LA
- coordinating the review and updating of the policy when necessary
- ensuring the Mathematics Action Plan is implemented, monitored, evaluated and reviewed in line with the SIP and priorities • providing a termly Subject Leaders Report in which areas for further development and the progress made towards the achievement of objectives are identified

Mathematics Overview

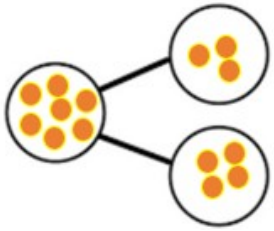
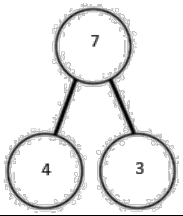
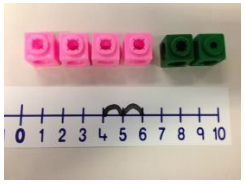
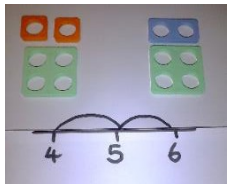
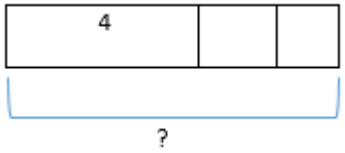
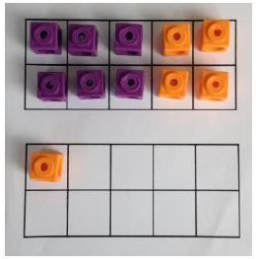
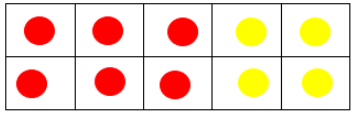
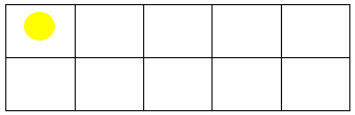
	Autumn					Spring						Summer			
N/R	Numbers and Place Value	Counting (number sense) Addition & Subtraction	Shape	Money		Counting numbers of objects Multiplication & Division	Writing numbers / recognising quantities Fractions	Length and Height	Weight			Numbers and Place Value Statistics	Position and Direction	Problem Solving	Measuring Time
1	Place Value	Addition & Subtraction	Shape	Place Value		Addition & Subtraction	Place Value	Length and Height	Weight and Volume			Fractions	Position and Direction	Place Value	Money Time
2	Place Value	Addition & Subtraction	Money	Multiplication and Division		Statistics	Shape	Fractions	Length and Height			Position and Direction	Problem Solving	Time	Mass, Capacity, Temperature
3	Place Value	Addition & Subtraction	Multiplication and Division			Multiplication & Division	Money	Statistics	Length, Height, Perimeter	Fractions		Fractions	Time	Shape	Mass, Capacity
4/5	Place Value	Addition & Subtraction	Multiplication & Division	Length and Perimeter		Multiplication & Division	Area & Perimeter	Fractions	Decimals			Money, Decimals & Percentages	Statistics	Time & Converting Units	Position and Direction
5/6	Place Value	Addition & Subtraction	Multiplication & Division	Statistics		Perimeter, Area & Volume	Fractions	Decimals & Percentages	Algebra and Ratio			Converting Units	Position & Direction	Properties of Shape	Problem Solving

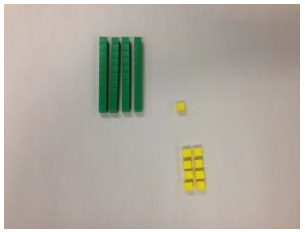
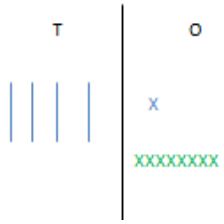
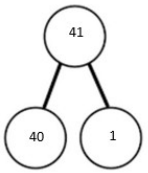
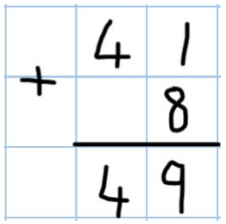
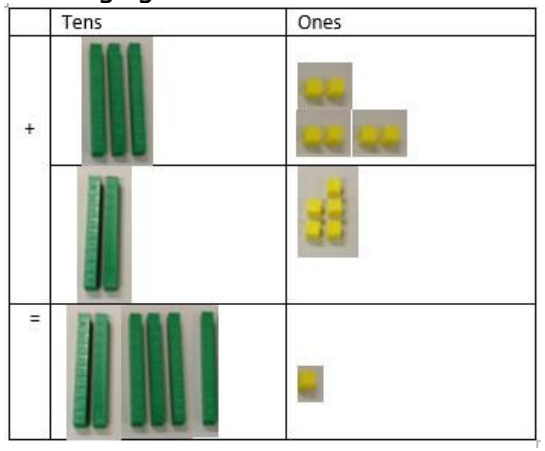
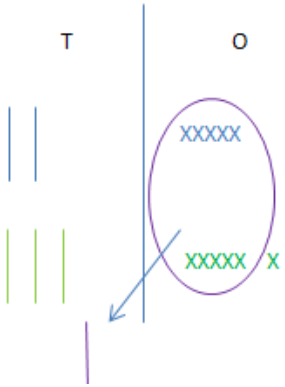
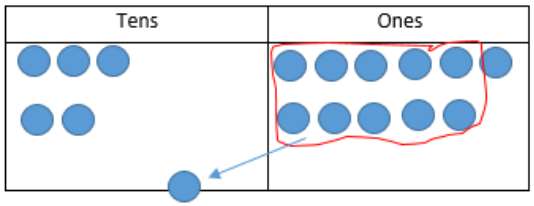
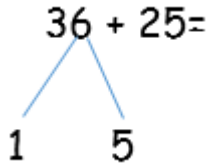
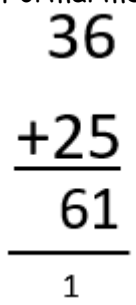
Concrete, Pictorial and Abstract Approaches

(linked to White Rose Planning)

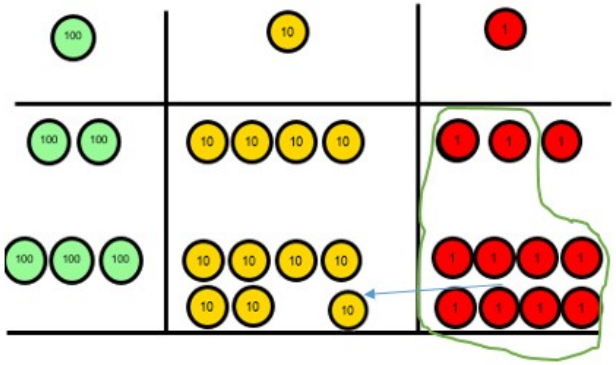
Addition- *EXAMPLES OF METHODS TO USE*

Key language which should be used: sum, total, parts and wholes, plus, add, altogether, more than, 'is equal to' 'is the same as'

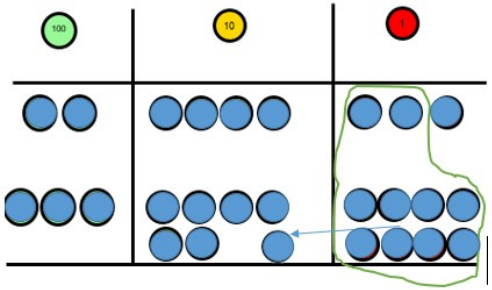
Concrete	Pictorial	Abstract
Combining two parts to make a whole (use other resources too e.g. eggs, shells, teddy bears etc)  		4 + 3 = 7 (four is a part, 3 is a part and the whole is seven) 
Counting on using number lines by using cubes or numicon  	A bar model which encourages the children to count on 	The abstract number line: What is 2 more than 4? What is the sum of 4 and 4? What's the total of 4 and 2? 4 + 2 
Regrouping to make 10 by using ten frames and counters/cubes or using numicon: 6 + 5  	Children to draw the ten frame and counters/cubes  	Children to develop an understanding of equality e.g 6 + ☐ = 11 and 6 + 5 = 5 + ☐ 6 + 5 = ☐ + 4

TO + O using base 10. Continue to develop understanding of partitioning and place value 41 + 8 	Children to represent the concrete using a particular symbol e.g. lines for tens and dot/crosses for ones. 	41 + 8  1 + 8 = 9 40 + 9 = 49 
TO + TO using base 10. Continue to develop understanding of partitioning and place value and use this to support addition. Begin with no exchanging. 36 + 25 	This could be done one of two ways:  	Looking for ways to make 10  30 + 20 = 50 5 + 5 = 10 50 + 10 + 1 = 61 Formal method: 

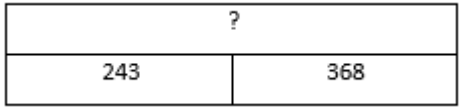
Use of place value counters to add HTO + TO, HTO + HTO etc. once the children have had practice with this, they should be able to apply it to larger numbers and the abstract



Chidren to represent the counters e.g. like the image below

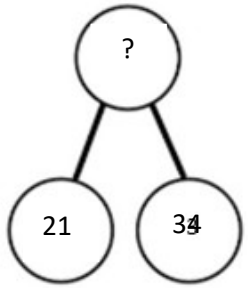


If the children are completing a word problem, draw a bar model to represent what it's asking them to do



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

Fluency variation, different ways to ask children to solve 21+34:



Sam saved £21 one week and £34 another. How much did he save in total?

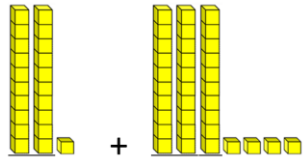
21+34=55. Prove it! (reasoning but the children need to be fluent in representing this)

$$\begin{array}{r} 21 \\ +34 \\ \hline \\ \hline \end{array}$$

21 + 34 =

$\square$ = 21 + 34

What's the sum of twenty one and thirty four?

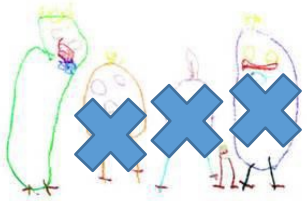
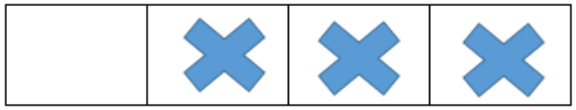
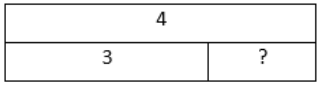
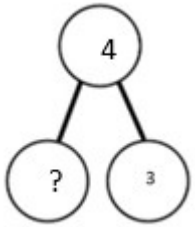
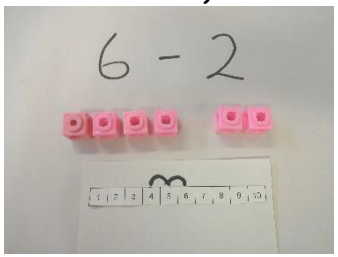
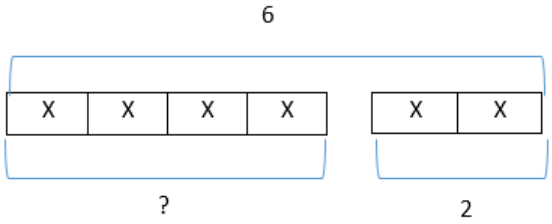
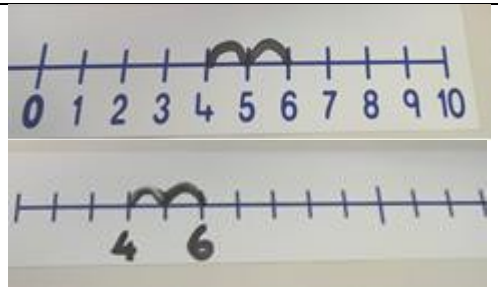


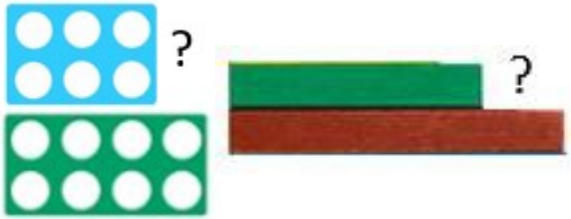
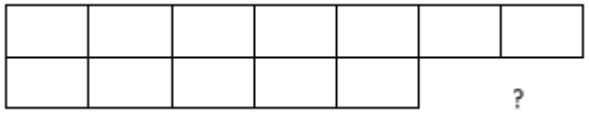
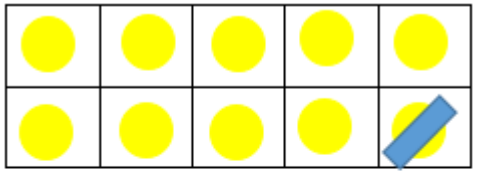
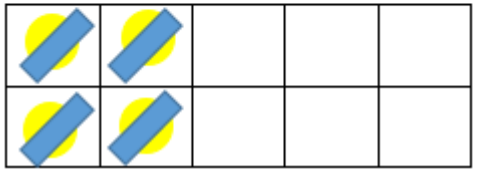
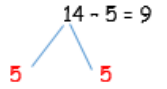
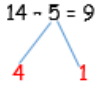
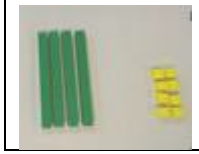
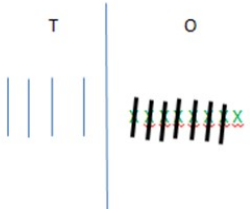
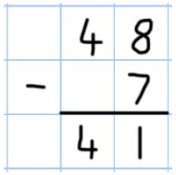
Always use missing digit problems too:

Tens	Ones
10 10	1
10 10 10	?
?	4

Subtraction- *EXAMPLES OF METHODS TO USE*

Key language which should be used: take away, less than, the difference, subtract, minus, fewer, decrease, '7 take away 3, the difference is four'

Concrete	Pictorial	Abstract
Physically taking away and removing objects from a whole (use various objects too) rather than crossing out- children will physically remove the objects 4 – 3 = 1 	Children to draw the concrete resources they are using and cross out.  Use of the bar model: 	**4- 3 =** **□ = 4 – 3**  
Counting back (using number lines or number tracks) 	Children to represent what they see pictorially e.g. 	

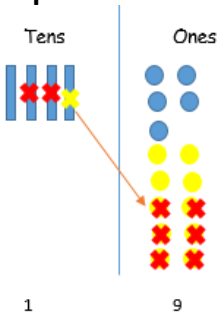
Finding the difference (using cubes, numicon or Cuisenaire rods, other objects can also be used)   	Children to draw the cubes/other concrete objects which they have used XXXXXXXX XXXXXX Use of the bar model  	Find the difference between 8 and 6. 8 – 6, the difference is ? Children to also explore why 9 - 7 = 8 – 6 (the difference, of each digit, has changed by 1 do the difference is the same- this will help when solving 10000-9987)
Making 10 (using numicon or ten frames) 14 – 5  Children could also do this by subtracting a 5 from the 10. 	Children to present the ten frame pictorially  	14 – 5 = 9 You also want children to see related facts e.g. 15 – 9 = 5 Children to represent how they have solved it e.g.  14 is made up of 5, 5 and 4 so I can subtract one 5 to be left with 4 and 5  5 is made up of 4 and 1 so I can subtract 4 to make 10 and then 1 to get to 9
Column method (using base 10) 48-7 	 	48 – 7 = 

Column method (using base 10 and having to exchange)

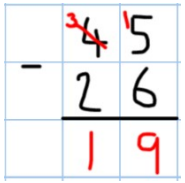
45-26

1) Start by partitioning 45
2) Exchange one ten for ten more ones
3) Subtract the ones, then the tens.

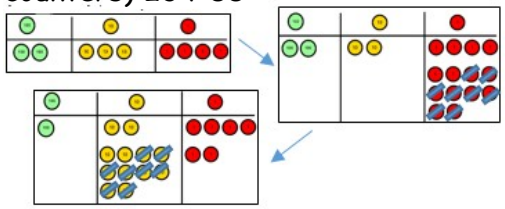
Represent the base 10 pictorially



It's crucial that the children understand that when they have exchanged the 10 they still have 45. 45 = 30 + 15

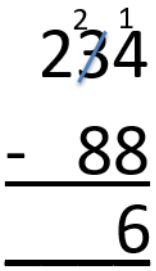


Column method (using place value counters) 234-88

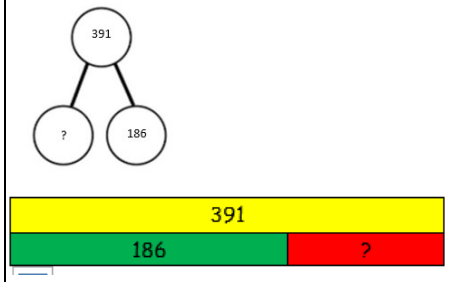


Once the children have had practice with the concrete, they should be able to apply it to any subtraction.

Like the other pictorial representations, children to represent the counters.



Fluency variation, different ways to ask children to solve 391-186:



Raj spent £391, Timmy spent £186. How much more did Raj spend?

I had 391 metres to run. After 186 I stopped. How many metres do I have left to run?

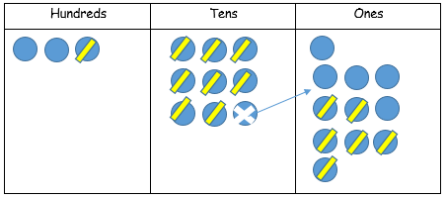
391 – 186

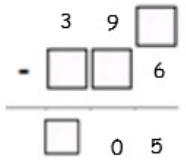
= 391 – 186

391
-186
———

Find the difference ebtween 391 and 186
Subtract 186 from 391.
What is 186 less than 391?

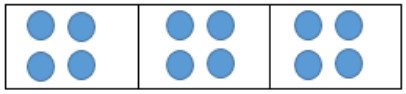
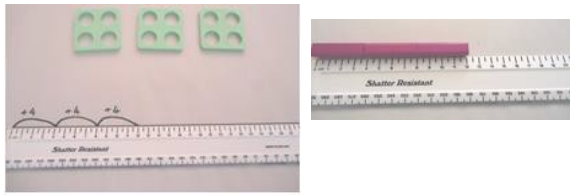
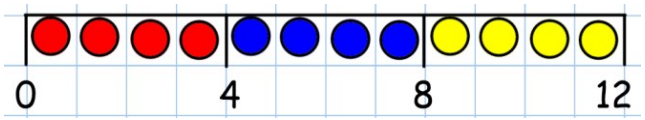
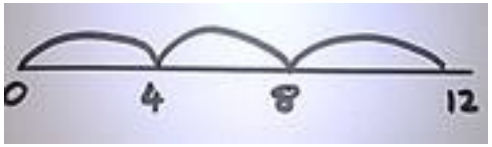
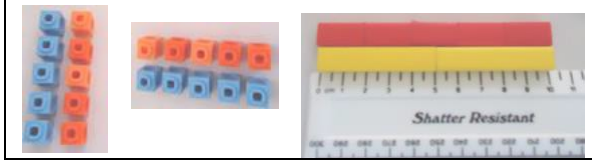
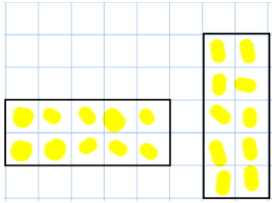
What's the calculation? What's the answer?

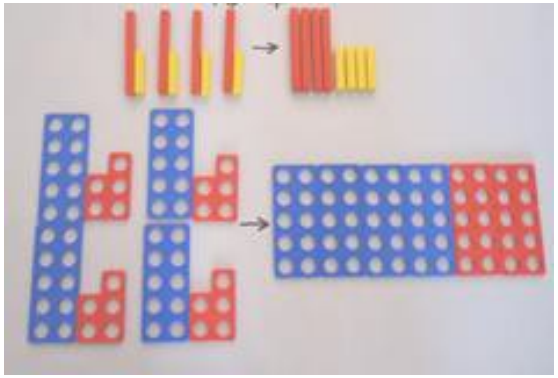
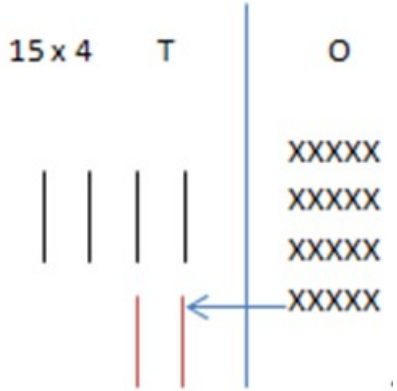
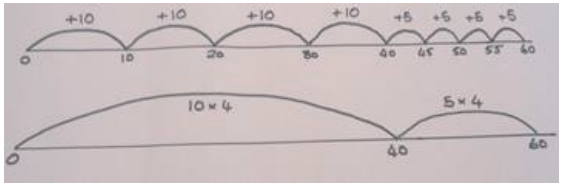
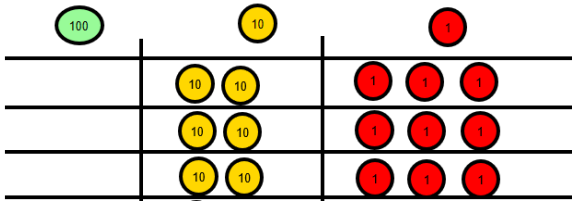




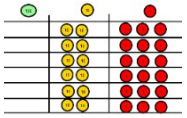
Multiplication- *EXAMPLES OF METHODS TO USE*

Key language which should be used: double times, multiplied by, the product of, groups of, lots of, 'is equal to' 'is the same as'

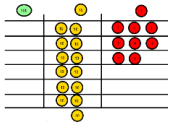
Concrete	Pictorial	Abstract
Repeated grouping/repeated addition (does not have to be restricted to cubes) 3 x 4 or 3 lots of 4 	Children to represent the practical resources in a picture e.g. XX XX XX XX XX XX Use of a bar model for a more structured method 	3 x 4 4 + 4 + 4
Use number lines to show repeated groups- 3 x 4 	Represent this pictorially alongside a number line e.g: 	Abstract number line **3 x 4 = 12** 
Use arrays to illustrate commutativity (counters and other objects can also be used) **2 x 5 = 5 x 2** 	Children to draw the arrays 	Children to be able to use an array to write a range of calculations e.g. 2 x 5 = 10 5 x 2 = 10 2 + 2 + 2 + 2 + 2 = 10 5 + 5 =10

Partition to multiply (use numicon, base 10, Cuisenaire rods) 4 x 15 	Children to represent the concrete manipulatives in a picture e.g. base 10 can be represented like: 	Children to be encouraged to show the steps they have taken 4 x 15 10 5 10 x 4 = 40 5 x 4 = 20 40 + 20 = 60 A number line can also be used 
Formal column method with place value counters or base 10 (at the first stage- no exchanging) 3 x 23 Make 23, 3 times. See how many ones, then how many tens 	**Children to represent the counters in a pictorial way** 	Children to record what it is they are doing to show understanding 3 x 23 20 3 3 x 20 = 60 3 x 3 = 9 60 + 9= 69 23 x 3 69
Formal column method with place value counters (children need this stage, initially, to understand how the column method works)	Children to represent the counters/base 10, pictorially e.g. the image below.	**6 x 23** 6 x 3 = 18 6 x 20 = 120 120 + 18 = 138

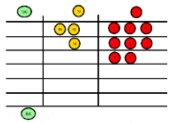
6 x 23



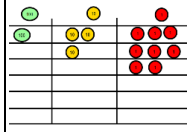
Step 1: get 6 lots of 23



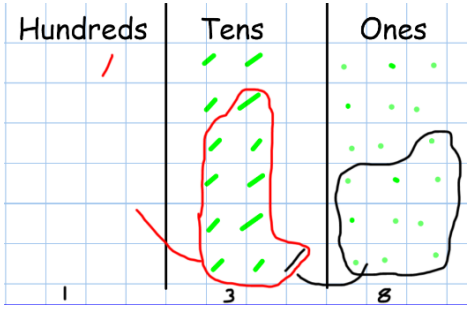
Step 2: 6 x 3 is 18. Can I make an exchange? Yes! Ten ones for one ten….



Step 3: 6 x 2 tens and my extra ten is 13 tens. Can I make an exchange? Yes! Ten tens for one hundred…



Step 4- what do I have I each column?



The aim is to get to the formal method but the children need to understand how it works.

$$6 \times 23 =$$

$$\begin{array}{r} 23 \\ \times\ 6 \\ \hline 138 \\ \hline 1\ 1 \end{array}$$

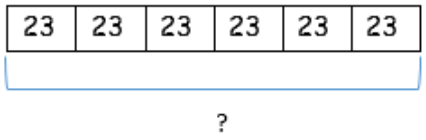
When children start to multiply 3d x 3d and 4d x 2d etc, they should be confident with the abstract:

To get 744 children have solved 6 x 124
To get 2480 they have solved 20 x 124

$$\begin{array}{r} 1\ 2\ 4 \\ \times\ \ \ 2\ 6 \\ \hline 7\ 4\ 4 \\ {\scriptstyle 1}\quad {\scriptstyle 2} \\ 2\ 4\ 8\ 0 \\ \hline 3\ 2\ 2\ 4 \\ \hline 1\ \ 1 \end{array}$$

Answer: 3224

Fluency variation, different ways to ask children to solve 6 x 23:



With the counters, prove that 6 x 23 = 138

Why is 6 x 23 = 32 x 6?

Mai had to swim 23 lengths, 6 times a week. How many lengths did she swim in one week?

Tom saved 23p three days a week. How much did he save in 2 weeks?

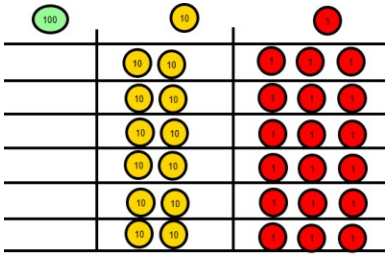
Find the product of 6 and 23

6 x 23 =

☐ = 6 x 23

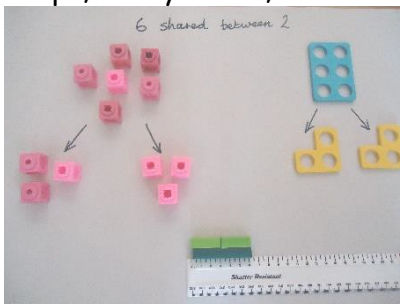
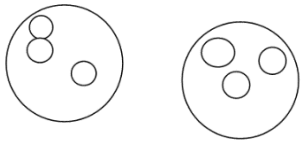
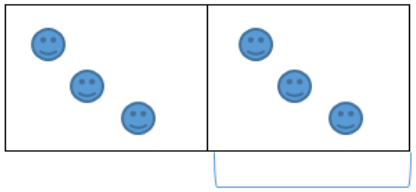
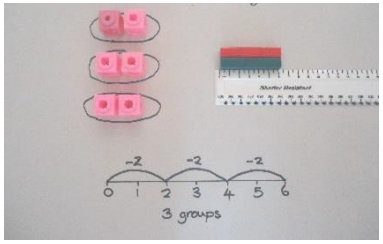
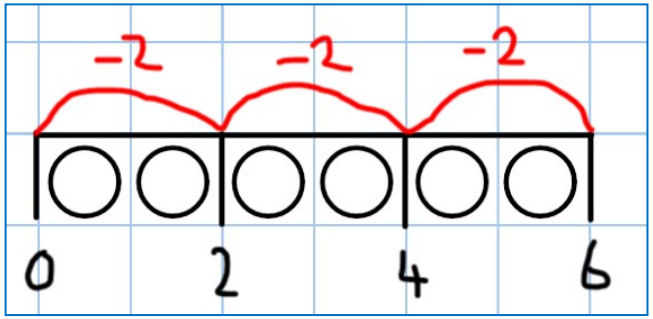
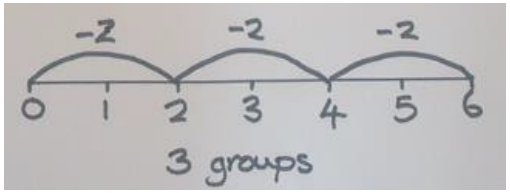
$$\begin{array}{r} 6 \\ \times\ 23 \\ \hline \end{array} \qquad \begin{array}{r} 23 \\ \times\ 6 \\ \hline \end{array}$$

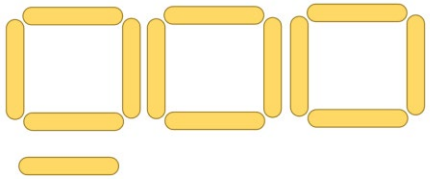
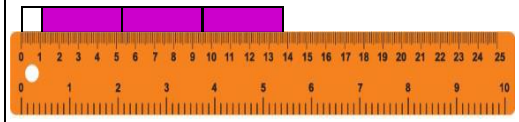
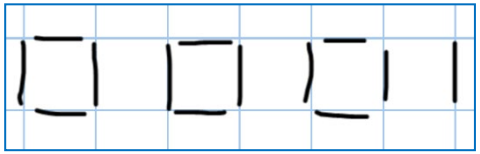
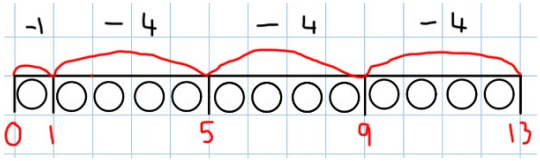
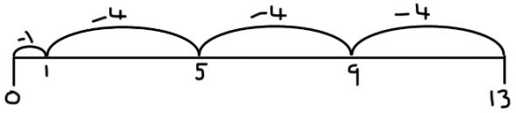
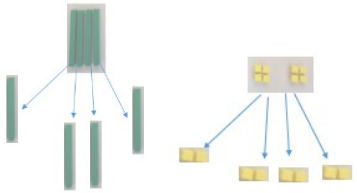
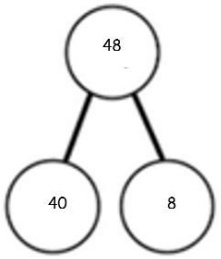
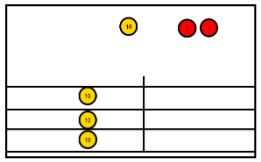
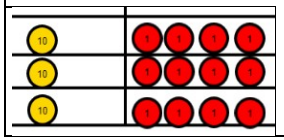
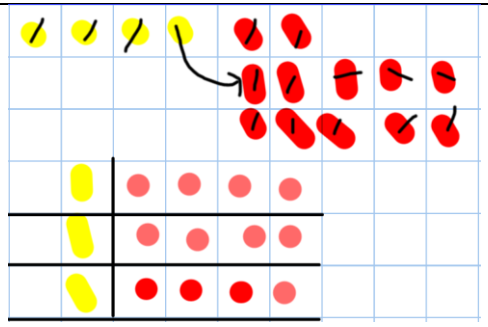
What's the calculation? What's the answer?



Division- *EXAMPLES OF METHODS TO USE*

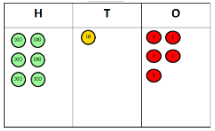
Key language which should be used: share, group, divide, divided by, half, 'is equal to' 'is the same as'

Concrete	Pictorial	Abstract
6 shared between 2 (other concrete objects can also be used e.g. children and hoops, teddy bears, cakes and plates) 	 This can also be done in a bar so all 4 operations have a similar structure: 	6 ÷ 2 = 3 What's the calculation? 3 | 3
Understand division as repeated grouping and subtracting 6 ÷ 2 		Abstract number line 
2d ÷ 1d with remainders 13 ÷ 4 – 3 remainder 1	Children to have chance to represent the resources they use in a pictorial way e.g. see below:	13 ÷ 4 – 3 remainder 1 Children to count their times tables facts in their heads

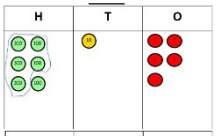
Use of lollipop sticks to form wholes  Use of Cuisenaire rods and rulers (using repeated subtraction) 	 	
2d divided by 1d using base 10 (no remainders) SHARING **48 ÷ 4 = 12**  Start with the tens.	Children to represent the base 10 and sharing pictorially.	48 ÷ 4 4 tens ÷ 4 = 1 ten 8 ones ÷ 4 = 2 ones  10 + 2 = 12
Sharing using place value counters. 42 ÷ 3= 14  1. Make 42. Share the 4 tens between 3. Can we make an exchange with the extra 10?  Exchange the ten for 10 ones and share out 12 ones		42 ÷ 3 42 = 30 + 12 30 ÷ 3 = 10 12 ÷ 3 = 4 10 + 4 = 14

Use of the 'bus stop method' using grouping and counters. Key language for grouping- how many groups of X can we make with X hundreds'- ***this can also be done using sharing!***

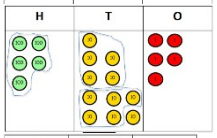
615 ÷ 5



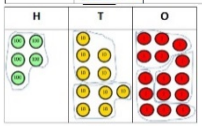
Step 1: make 615



Step 2: Circle your groups of 5



Step 3: Exchange 1H for 10T and circle groups of 5



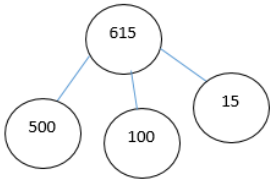
Step 4: exchange 1T for 10ones and circles groups of 5

This can easily be represented pictorially, till the children no longer to do it.
It can also be done to decimal places if you have a remainder!

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

Fluency 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 the 'bus stop' method?



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?

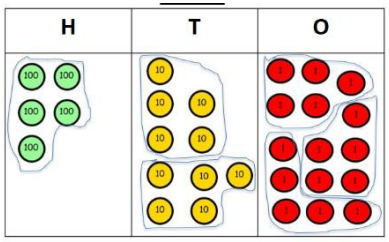
$$5\overline{)615}$$

615 ÷ 5 =

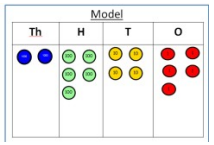
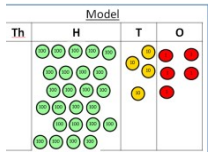
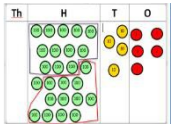
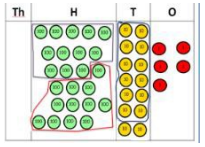
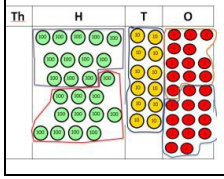
☐ = 615 ÷ 5

How many 5's go into 615?

What's the calculation? What's the answer?



Long division

Concrete	Pictorial	Abstract
 0 2 1 2 12 | 2544 24 14 12 24 24 0 2544 ÷ 12 How many groups of 12 thousands do we have? None	Children to represent the counters, pictorially and record the subtractions beneath.	0 12 | 2544 Step one- exchange 2 thousand for 20 hundreds so we now have 25 hundreds.
 Exchange 2 thousand for 20 hundreds.		0 2 12 | 2544 24 1 Step two- How many groups of 12 can I make with 25 hundreds? The 24 shows the hundreds we have grouped. The one is how many hundreds we have left.
 0 2 12 | 2544 24 1 How many groups of 12 are in 25 hundreds? 2 groups. Circle them. We have grouped 24 hundreds so can take them off and we are left with one.		0 2 1 12 | 2544 24 14 12 2 Exchange the one hundred for 10 tens. How many groups of 12 can I make with 14 tens? The 14 shows how many tens I have, the 12 is how many I grouped and the 2 is how many tens I have left.
 0 2 1 12 | 2544 24 14 12 2 Exchange the one hundred for ten tens so now we have 14 tens. How many groups of 12 are in 14? 1 remainder 2.		0 2 1 2 12 | 2544 24 14 12 24 24 0 Exchange the 2 tens for 20 ones. The 24 is how many ones I have grouped and the 0 is what I have left.
 Exchange the two tens for twenty ones so now we have 24 ones. How many groups of 12 are in 24? 2		