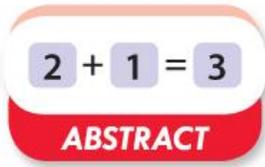# CONCRETE PICTORIAL ABSTRACT

Measham C of E Primary School

Calculation Guide

Subtraction

A guide for parents and carers on the methods used in school

Rationale

Mathematics is all around us; it underpins much of our daily lives and our futures as individuals and collectively. As the Secretary of State for Education said last year:

'... mathematical understanding is critical to our children's future. Our economic future depends on stimulating innovation, developing technological breakthroughs, making connections between scientific disciplines. And none of that is possible without ensuring more and more of our young people are mathematically literate and mathematically confident. Mathematical understanding underpins science and engineering, and it is the foundation of technological and economic progress. As information technology, computer science, modelling and simulation become integral to an ever-increasing group of industries, the importance of maths grows and grows.'[1]

It is therefore of fundamental importance to ensure that children have the best possible grounding in mathematics during their primary years.
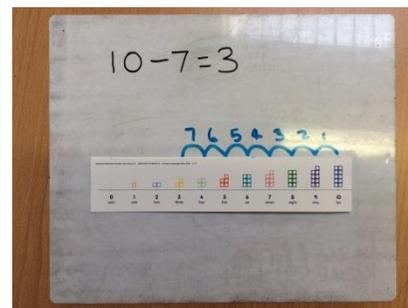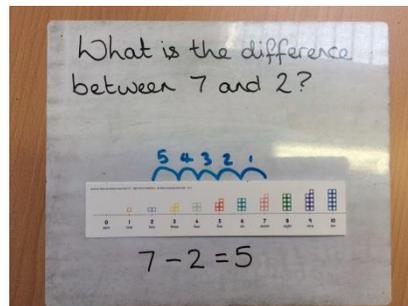
Year 1

10 − 7 =

10 − 7 = 3
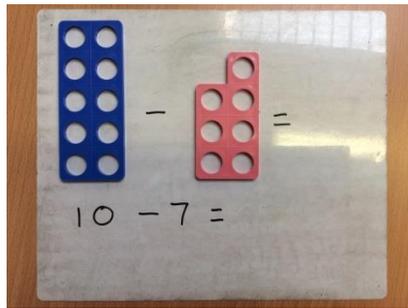
I can use Numicon to help me subtract numbers, by laying them on top and seeing how many are left.
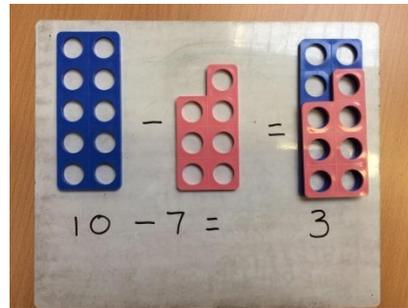
I can use a number line to help me take away and count backwards

I can use subtraction to find the difference on a number line or by using Numicon

10 − 7 = 3

What is the difference between 7 and 2?

7 − 2 = 5

Equipment

Key Vocabulary

Subtraction, subtract, take away, difference, difference between, minus, less than, equals, least, digit
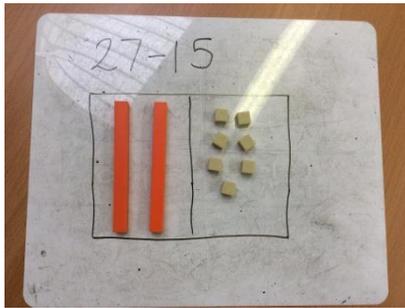
Example of Key Questions

I think of a number and I subtract 5. The answer is 24. What was my number?
Insert numbers to make this number sentences correct.
13 − __ < 6

Year 2

I can use Cuisenaire rods to show subtraction.

I begin with an amount and then remove the rods to see what remains.
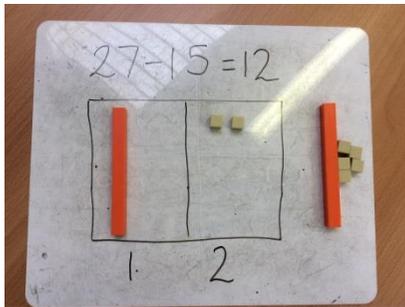
I can use the exchanging method to swap a Ten for ten Units/Ones, when the calculation requires it.

I swap a Ten for ten Units/Ones, then carry out the subtraction and see what remains.

Equipment

Key Vocabulary

Subtraction, subtract, take away, difference, difference between, minus, Tens, Units/Ones, partition, near multiple of 10, tens boundary, less than, one less, two less... one hundred less, more, one more, two more... ten more... one hundred more

Example of Key Questions

I think of a number and I subtract 5. The answer is 24. What was my number?
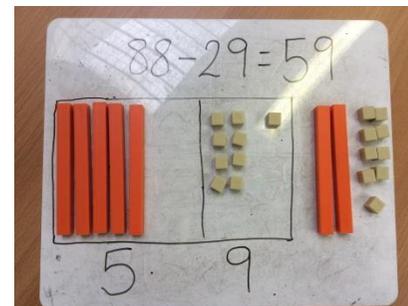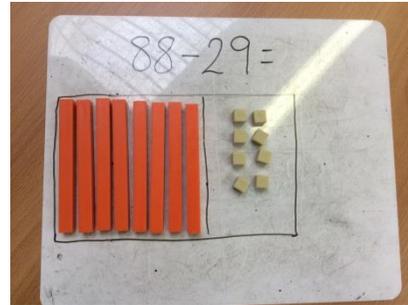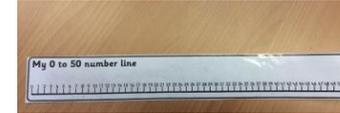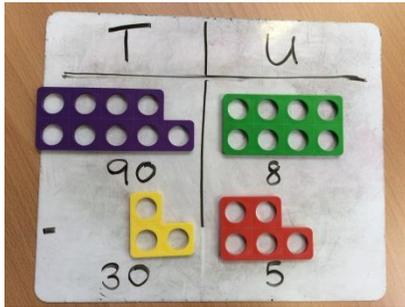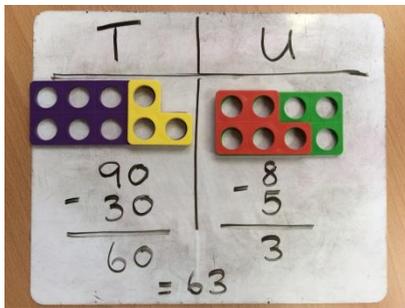Insert numbers to make this number sentences correct.
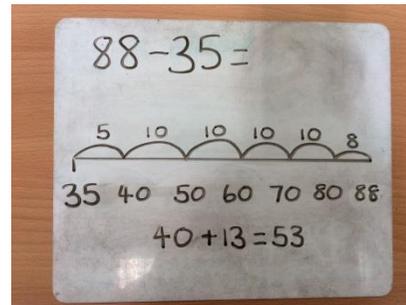13 – __ < 6

Year 3

I can subtract by partitioning both numbers, subtracting them and then putting them back together

I can use Numicon shapes to help

I can subtract by using number lines to count up.

88-35=

5 10 10 10 10 8

35 40 50 60 70 80 88

40 + 13 = 53

When I am secure with subtraction by using partitioning using Numicon - I can then use a column method to partition, subtract and then put the numbers back together.
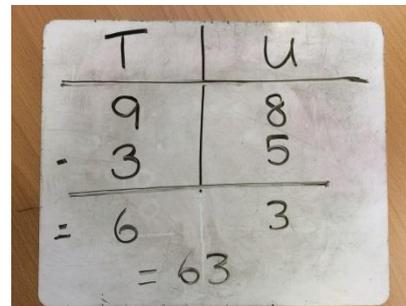
Mental Strategies

- I can count on and back, in steps of 4,8,50 and 100.
- I can subtract the nearest multiple of 10 then adjust e.g. 63-29 is the same as 63-30+1.
- I can Subtract on by partitioning e.g. 72-31= 72-30-1= 42-1=41

Equipment

Key Vocabulary

Estimate, decrease, inverse, rounding, exchange, subtraction, subtract, take away, difference, difference between, minus, Tens, Units/Ones, partition, near multiple of 10, tens boundary, less than, one less, two less... one hundred less, more, one more, two more... ten more... one hundred more

Example of Key Questions

Sam has completed these calculations, but he is incorrect. Explain the errors he has made.

```
  325          355
+ 247        + 247
  581          112
```

I can use an expanded method of subtraction. I partition the numbers, and then borrow ten or hundred from the previous column if needed.

When I am secure with the expanded method of subtraction, I can then use the compacted method by carry across from the tens or hundreds.

Mental Strategies

- I can count on and back, in steps of 4,6,7,8,9,25, 50 and 100.
- I can count on and back by partitioning e.g. 5.6-3.7, 5.6-3-0.7 = 8.6-0.7 = 9.3
- I can count on and back by bridging e.g. 6070-987, 4987+13+1000+70
- I can count on and back by reordering e.g. 28-75, 75-28 (thinking of 28 as 25+3)

Equipment

Key Vocabulary

Estimate, decrease, inverse, rounding, exchange, subtraction, subtract, take away, difference, difference between, minus, Tens, Units/Ones, partition, near multiple of 10, tens boundary, less than, one less, two less... one hundred less, more, one more, two more... ten more... one hundred more

Example of Key Questions

Write >, = or < in each of the squares to make the number sentence correct

1232 – 232 ☐ 1355 – 252

1237 – 68 + 32 ☐ 1242 – 69 + 31

Year 5

I can use the compacted method for subtraction moving on to column method. I can carry from the tens, hundreds and thousands.

When I am secure with column subtraction of larger numbers, I can now subtract numbers involving decimals.

I must remember that the decimal place never moves.

Mental Strategies

- I can count forwards and backwards using tenths and hundredths and using negative and positive numbers
- I can partition e.g. 540-287, 540-200-80-7.
- I can compensate e.g. 5.7-3.9, 5.7-4.0+0.1
- I can use known facts and place value to find related facts.

Equipment

Key Vocabulary

Estimate, decrease, inverse, rounding, exchange, subtraction, subtract, take away, difference, difference between, minus, Tens, Units/Ones, partition, near multiple of 10, tens boundary, less than, one less, two less... one hundred less, more, one more, two more... ten more... one hundred more

Example of Key Questions

Using this number statement, 5222 – 3111 = 5223 – 3112 write three more pairs of equivalent calculations.

Mrs Carpenter says, 'If you keep subtracting 3 from 397 you will eventually reach 0.'

Do you agree? Explain your reasoning

I can subtract using the column method of larger numbers, carrying the tens, hundreds etc.

I can subtract decimal numbers using the column method, remembering that the decimal point never moves.

I can solve word problems using subtraction to show my understanding at a deeper level

I can show my understanding by completing missing number problems

Brazil are getting ready for the world cup. Estádio do Maracanã seats 78,838 people. The Brazilian FA decides to replace all of the seats to match the colours on the Brazilian flag. They have 25,306 green seats, 18,057 yellow seats and 31,241 blue seats. How many white seats will they need?

1.

Mental Strategies

- I can investigate order of operations using BODMAS e.g. Brackets, Operations, Division, Multiplication, Addition and Subtraction

Equipment

Key Vocabulary

Estimate, decrease, inverse, rounding, exchange, subtraction, subtract, take away, difference, difference between, minus, Tens, Units/Ones, partition, near multiple of 10, tens boundary, less than, one less, two less... one hundred less, more, one more, two more... ten more... one hundred more

Example of Key Questions

Kamal says, '893 is 7 less than 900, and 900 is 100 less than 1000, so I can work out the subtraction by taking away 1000 and then taking away 100 and then taking away 7.'
What answer does Kamal get, and is he correct?

Put brackets in these number sentences so that they are true.
$12 - 2 \times 5 = 50$ $12 - 8 - 5 = 9$ $10 \times 8 - 3 \times 5 = 250$