Number – addition and subtraction

Number – multiplication and division

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represent and use number bonds up to 20

Start with number bonds to 10 then build. Use a wide range of objects (including fingers!) and images to model the bonds, e.g. interlocking cubes and numicon

$0 + 7 = 7$ $7 = 7 + 0$

$1 + 6 = 7$ $7 = 6 + 1$

$2 + 5 = 7$ $7 = 5 + 2$

$3 + 4 = 7$ $7 = 4 + 3$

Adding 10 to a number
Adding 0 to a number
Near double

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represent and use number bond facts related subtraction up to 20

Start with number bonds to 10 then build. Use a wide range of objects (including fingers!) and images to model the bonds, e.g. interlocking cubes.

$7 - 0 = 7$ $0 = 7 - 7$

$7 - 1 = 6$ $1 = 7 - 6$

$7 - 2 = 5$ $2 = 7 - 5$

$7 - 3 = 4$ $3 = 7 - 4$

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count in multiples of twos, fives and tens (from number and place value)

Counting using a variety of practical resources
Counting in 2s e.g. counting socks, shoes, animals in the ark…
Counting in 10s
e.g. hundred square, towers of cubes…

Count in twos from zero

Count in fives from zero

Count in tens from zero

Use rhymes, songs and stories involving counting on and counting back in ones, twos, fives and tens.
Use 2p, 5p and 10p coins.

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group and share small quantities

Practical activities involving sharing,
Distributing cards when playing a game, putting objects onto plates, into cups, hoops etc.

Grouping
Sorting objects into 2s / 3s/ 4s etc
How many pairs of socks are there?

There are 12 crocus bulbs. Plant 3 in each pot. How many pots are there? Jo has 12 Lego wheels. How many cars can she make?

Sharing pictures /objects
12 children get into teams of 4 to play a game. How many teams are there?

Sweets are shared between 2 people. How many do they have each?

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add one-digit and two-digit numbers to 20, including zero

Bead strings or bead bars can be used to illustrate addition including bridging ten by counting on 2 then 3.

$8 + 5$

On a prepared number line… $7 + 4 = 11$

On a hundred square… $3 + 4$
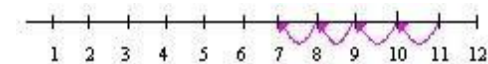
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subtract one-digit and two-digit numbers to 20, including zero

Practically with objects,
fingers etc. 5 - 2 "Put 5 in your head, 4, 3."

Taking away
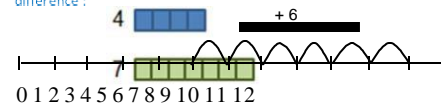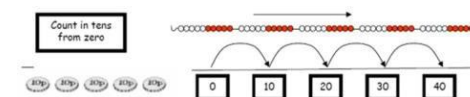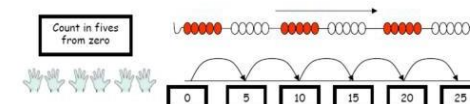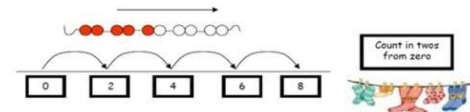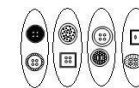Number lines (numbered and unnumbered, prepared and child constructed)

Hundred
Square 17 - 3

Finding the difference
Number lines (numbered and unnumbered, prepared and child constructed)

Use practical equipment (such as numicon or cuisenaire) to identify the 'difference':

4 $+ 6$

$0\ 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10\ 11\ 12$

'The difference between 7 and 4 is 3' or 'Seven is 3 more than four'.

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double numbers and quantities

Practically double a group of objects and/or quantities to find double of a number by combining then counting the two groups.
Progress onto using known facts and counting (in 1s, 2s, 5s and 10s) to double more efficiently.

10   and   10   is 20

Finding halves and quarters of numbers and quantities

Practically halve objects and/or qualities by sharing them out into two piles and then counting the number of objects in each pile, or cutting/folding pictures of objects in half. Progress onto using known facts and counting (in 1s, 2s, 5s and 10s) to halve more efficiently.
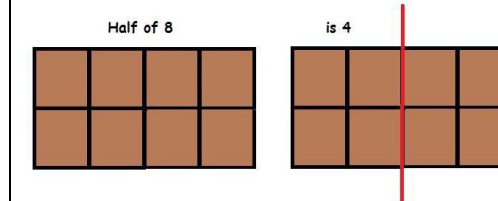
Half of 8   is 4

Number – addition and subtraction

Number – multiplication and division

read, write and interpret mathematical statements involving addition (+) and equals (=) signs	read, write and interpret mathematical statements involving subtraction (–) equals (=) signs	make connections between arrays and number patterns	make connections between arrays and number patterns

read, write and interpret mathematical statements involving addition (+) and equals (=) signs

It is important to that children have a clear understanding of the concept of equality, before using the '=' sign. Calculations should be on either side of the '=' to that children don't misunderstand '=' as to mean 'the answer'.

15 + 2 = 17
15 = 3 + 12

read, write and interpret mathematical statements involving subtraction (–) equals (=) signs

It is important to that children have a clear understanding of the concept of equality, before using the '=' sign. Calculations should be on either side of the '=' to that children don't misunderstand '=' as to mean 'the answer'.

15 - 2 = 13 15 =
18 - 3

make connections between arrays and number patterns

Arrays

Looking at column   Looking at rows
  2 + 2+2   3 + 3
  3 groups of   2 groups of 3

Arrays and repeated addition

  4 x 2 or 4 + 4

  2 x 4   or 2 + 2 + 2 + 2

make connections between arrays and number patterns

There are 4 groups of 3 in 12.
12 shared
between 4 is 3.

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solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = [] + 4

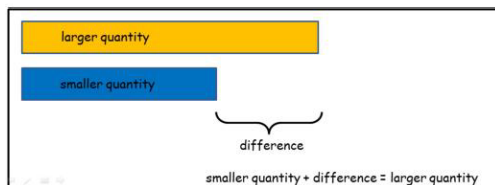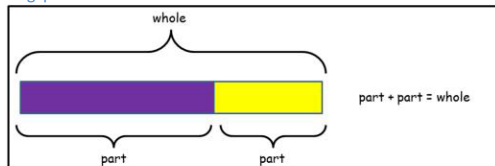To support this, when solving calculations, missing numbers should be placed in all possible places:
3 + 4 =   = 4 + 3   3 +   = 7   7 = 4 +

4 +   = 7   7 = 3 +
   + ∇ = 7   7 = + ∇

Use all the models and images mentioned above. Discuss which is most effective and why.

Singapore Bar Method

solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = []– 9

To support this, when solving calculations, missing numbers should be placed in all possible places:
  16 - 9 =   = 16 - 9
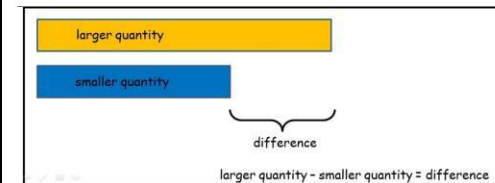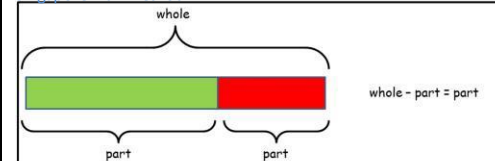 16 -   = 7   7 =   - 9
    - 9 = 7   7 = 16 –

    - ∇ = 7   7 = - ∇

Use all the models and images mentioned above. Discuss which is most effective and why.

Singapore Bar Method

solve one-step problems involving multiplication, by calculating the answer using concrete objects, pictorial representations and arrays with the support

Use all the models and images mentioned above. Discuss which is most effective and why.
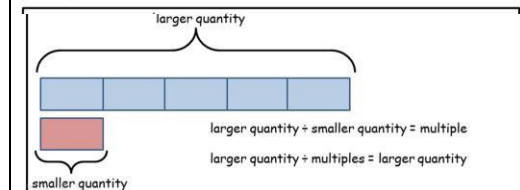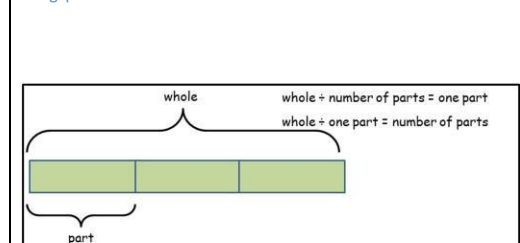
Singapore Bar Method
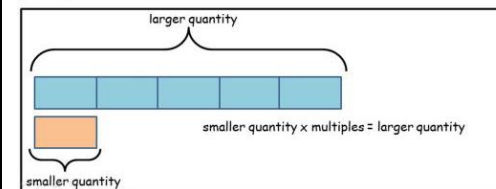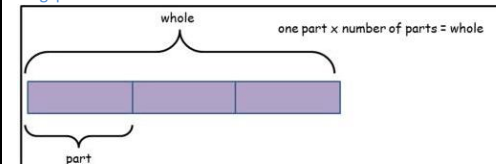
solve one-step problems involving division, by calculating the answer using concrete objects, pictorial representations and arrays with the support

Use all the models and images mentioned above. Discuss which is most effective and why.

Singapore Bar Method

understand and use vocabulary for addition, e.g. put together, add, altogether, total and more than	understand and use vocabulary for addition and subtraction, e.g. take away, distance between, difference between and less than	use a variety of language to describe multiplication	use a variety of language to describe division
+, add, more, plus, make, total, altogether, score, double, near double, one more, two more… ten more,	- subtract, take (away), minus, leave, how many are left/left over? how many have gone? one less, two less, ten less… how many fewer is… than…? how much less is…? difference between, half, halve, counting up/back…	count on (from, to), count back (from, to), count in ones, twos, threes, fours, fives… count in tens, lots of, groups of, x, times, multiply, multiplied by, multiple of, once, twice, three times… ten times… times as (big, long, wide… and so on), repeated addition, array, row, column, double, halve	Array, row, column, halve, share, share equally, one each, two each, three each… group in pairs, threes… tens, equal groups of ÷, divide, divided by, divided into, left, left over
= equals, sign, is the same as	= equals, sign, is the same as	= equals, sign, is the same as	= equals, sign, is the same as
How many more to make…? How many more is… than…? How much more is…? Repetition of facts with different vocabulary: "What is 2 add 5?" "What is 2 more than 5?" "What is 2 plus 5?" What is the total of 2 and 5?" etc	Repetition of facts with different vocabulary: "What is 7 take away 3?" "What is 3 less than 7?" "What is 7 subtract 3?" "What is the difference between 3 and 7?" etc		